

TECHNOLOGY AND ENGINEERING

Abstract

The Reliability Centered Maintenance (RCM) has caused significant changes in the maintenance philosophy. The project aims at considering the use of the RCM combination and condition monitoring in the study of the gas turbine components on a compressor station for the Oman gas company in Alwasta Region. It analyses the RCM concepts applied in the gas turbine compressor maintenance and suggests the plan for the chosen asset improvement. In addition, the project is an attempt to improve the availability of the compressor station gas turbine, to monitor its components, and provide recommendations in terms of operation and scheduled maintenance for the investigated company. The project presupposes the implementation of the traditional RCM methodology to analyze the failure mode of the gas turbine compressor Titan-130. It includes a decision diagram, information worksheet, failure mode diagram, decision worksheet, and the FMEA appliance. A comparison was carried out to address the parameters before, during, and after the functional failure.

It is concluded that the process of system maintenance is essential to any organization. A firm should evolve with technology replacing out-of-date technology to be able to compete within the industry. The gas turbine compressor Titan-130 has proven to be effective providing the management team with all necessary tools to manage any system-related problem. The use of the tools is an essential step in increasing the system longevity and productivity. However, a mistake while chart or table creation may result in

catastrophic ramifications. Therefore, it is a need to create them with increased attention and scrutiny. It is recommended to employ an expert to deal with tool weaknesses. The development of the best tool requires manufacturers' involvement and development of computer software as it replaces the manual work. Further research will help to determine the of maintenance levels from each manufacturer and evaluate the risk variation between different machine sizes.