

Application of the Turnaround Maintenance (TAM) Model to Gas Plants in Case Study for Heat Exchangers

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Abstract

Oil and gas plants consist of many pieces of equipment and complex chemical processes that continuously operate under rigorous conditions of high pressures and fluctuating temperatures. Therefore, these devices require a total shutdown to perform Turnaround Maintenance (TAM) for a certain time period to carry out activities associated with inspection actions, replacement and repairs in order to avoid early aging of a plant resulting from corrosion, erosion, and fatigue. The purpose of this paper is to apply TAM model on heat exchangers as a part of Critical Static Equipment (CSE) of gas plants to prolong component life and reduce consequences. This model includes three stages: removing some TAM activities that are associated with rotary machineries from scope of work (SOW) to maintain as a part of routine maintenance plan, applying Risk Based Inspection (RBI) of critical static equipment, and application of probability distributions. The results from TAM model application to improve TAM scheduling associated with decreasing duration and increasing interval of TAM, and generate an improvement in availability, reliability of gas plants, and operation and maintenance costs and the consequent rise in production and an increase of profit. In addition, enhance attention at the development of on-line maintenance. This case study will present a real example of improving TAM scheduling of gas plants and adapt for implementation in other static equipment pieces of oil and gas industries.

Keywords

Turnaround Maintenance (TAM) Scheduling, Risk-Based Inspection (RBI), Probability Distributions, and Oil and Gas industry.