ABSTRACT

Engine CT7 is an engine with the highest maintenance demand in PT Nusantara Turbin & Propulsi. The high number of demand leads to a substantial downtime. Main factors that cause this considerable downtime are the high number of lead time of the non-repairable components and also due to material handling system that not quite optimal in maintaining Engine CT7. Reliability Centered Spares (RCS) is a method that can be utilized to determine and detect thoroughly the critical components, therefore an appropriate management policy of those components can be taken. Spare Part Inventory Management is very vital because in many maintenance cases if any spare part is not available, it can obstruct the whole maintenance process. Material Handling equipment is not less crucial. it could optimize the overall maintenance process with high efficacy, the framework method in material handling selection could determine the most optimal material handling equipment. In order to significantly reduce the downtime, PT Nusantara Turbin & Propulsi must implement a hold parts strategy for the critical components of Engine CT7. The spare parts needs for the next five years are 22 compressor rotor, 12 mid frame, 19 turbine blade, dan 11 power turbine. To speed up the maintenance time of Engine CT7 by 42 hours 45 minutes and to cut the cost by $ 200,73, PT Nusantara Turbin & Propulsi should preferably use Unitload 2 in Material handling system, and use Forklift and Moverak as the Material Handling equipment.

Index Terms *- Framework, Maintenance, Material handling, Reliability Centered Spares, Spare part*