

Criticality Analysis – Vital, Essential, Desirable (VED)



OVERVIEW

Lost Productivity of Oil & Gas industry is huge. Most operators have difficulty to classify materials according to their criticality due to several factors. Generally operations and maintenance department tend to classify everything as critical to protect any unforeseen breakdowns of equipment's. This is another way of protecting organizational inefficiencies. However, in majority of the cases end users fail to locate these materials at the time of an emergency, due to inconsistent master data, non-structured formats used for part numbers, lack of bill of materials tied to inventory, etc.

Criticality of materials stocked in inventory is different from the equipment criticality. Hence a good materials management function should be able to derive stocking strategies based on individual materials criticality.

- Majority of equipment failures are unexpected
- Majority of failures occur to a few types of equipment's
- Majority of failures are due to particular components and due to few cause

Benefits of Criticality Classification:

- Varied service levels based on material criticality
- 80/20 Rule – Only 20% of materials needs special attention in the warehouse
- Optimized physical inventory management
- Stocking levels (incl. Safety Stock) based on criticality
- Avoid over stocking and free up working capital
- Avoid lost productivity (LPO)
- SMART Stocking Strategy

HOW CAN WE HELP?

We are bringing in expertise understanding the criticality of materials based on MM criticality. Our tool will help categorize materials based on different classifications and help define stocking strategies according to the nature of that specific material group.

Factors Considered for Criticality Analysis

- Equipment Criticality based on type and classification
- Lead Time – SDE Analysis
- Movement – FSN Analysis
- Value Analysis – HML Analysis
- Capital (Insurance Spares)/ Operational (Wear Items)
- Bill of Material (BOM) status
- Mean Time Between Failures (MTBF)

Case Studies: Criticality Analysis

Downstream Refining



Operational Profile:

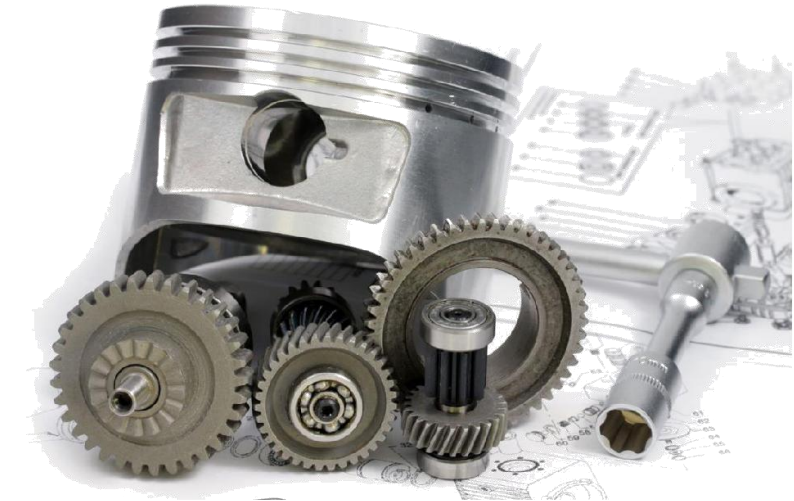
- Client International Major Oil & Gas (Confidential)
- Business Units: Refinery
- Operations: Downstream
- Scope: Operational Spare Parts
- Estimated Inventory: \$28MM
- Number of Storage Locations: 5

Business Case

- A GE Frame 6B Gas Turbine Shaft, valued at \$0.01, not tied to any bill of materials, and not identified as a critical piece of equipment. During the material cleanup effort maintenance group has reviewed all dead moving (i.e. not moved for 5 or more years) materials. The engineer marked this Shaft as “Not Required”, and requested warehouse to scrap/ sell. Warehouse personal verified with the department head and got approval to sell. Removed the Shaft from the rack and placed in the scrap yard. A week later, another engineer came running to the warehouse asking about this Shaft he saw in the scrap yard. After further investigation MM group was able to track the entire history of this material, and it is worth \$725K and belong to a critical Gas Turbine.
- Only 6% of Warehouse materials were marked as critical in SAP
- 60% of Materials inside the warehouse are marked as “Dead” – not moved for 5 or more years

Results

- Identified 22% of Critical Materials. Several items that were marked as critical in the past were not critical.
- Reduced stocking levels to 38% based on the revised criticality based stocking strategy
- Segregated all Critical Materials in a secured location (fenced) within the warehouse, and ensured 100% of inventory accuracy
- Maintained Service Levels of 99.96% for Critical Materials





Contact Details

ExCOMATIX
11111 Katy Freeway, Suite 910
Houston Texas, 77079
Fax: +1-281-712-7566
Email: info@excomatix.com
Web: www.excomatix.com