

Subs, Functions and Event Procedures in Excel VBA

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MAINTENANCE STRATEGY

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MAINTENANCE FUNCTION

- PLAN**
 - 1. Determine the sequence of operations in the production process for the equipment.
 - 2. Determine the sequence of operations in the production process for the equipment.
- DO**
 - 1. Determine the sequence of operations in the production process for the equipment.
 - 2. Determine the sequence of operations in the production process for the equipment.
- CHECK**
 - 1. Determine the sequence of operations in the production process for the equipment.
 - 2. Determine the sequence of operations in the production process for the equipment.
- ACT**
 - 1. Determine the sequence of operations in the production process for the equipment.
 - 2. Determine the sequence of operations in the production process for the equipment.

Reliability Centered Maintenance (RCM)

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Advantage

- Reduces the number of failures
- Reduces the number of failures
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Process Of RCM

- 1. Determine the sequence of operations in the production process for the equipment.
- 2. Determine the sequence of operations in the production process for the equipment.
- 3. Determine the sequence of operations in the production process for the equipment.
- 4. Determine the sequence of operations in the production process for the equipment.
- 5. Determine the sequence of operations in the production process for the equipment.
- 6. Determine the sequence of operations in the production process for the equipment.

Predictive Maintenance (PdM)

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Process Approach Maintenance Function

- 1. Determine the sequence of operations in the production process for the equipment.
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Risk of Selecting Maintenance Function

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Selecting and appropriate maintenance strategy and choosing one or more techniques becomes a simpler decision when the failure modes are understood.

A schematic of the decision process in selecting an appropriate maintenance strategy.

- a. Prepare for the analysis
- b. Select the equipment to be analyzed
- c. Identify functional failure
- d. Identify and evaluate the effects of failure
- e. Identify the causes of failure
- f. Select maintenance tasks

Risk Based Maintenance (RMB)

- Opportunities for incremental improvement by eliminating low value tasks and introducing tasks that address high commercial risk areas.
- Reduces the current commercial risk and analyze the risks and benefits of steps to mitigate failure.

Purpose of RMB

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Risk Concept

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Condition-Based Maintenance

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- Reduces the number of failures
- Reduces the number of failures
- Reduces the number of failures
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- Reduces the number of failures

Risk Associated With Implementation

- Time - availability, time management
- Organization - right staff, right responsibilities
- Energy - short term and long term to drive success

Total Preventive Maintenance (TPM)

- Periodic and systematic inspections and condition monitoring of plant/machinery, targeting at identifying deterioration period/maintenance of deteriorated deteriorated.
- Other names - Scheduled Maintenance - Periodic Maintenance - Planned Maintenance - Routine Maintenance

Purpose of TPM

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TPM Objectives

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MAINTENANCE STRATEGIES:
defines the rules for the sequence of
planned maintenance work in the Plant
Maintenance (PM) application
components.

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MAINTENANCE FUNCTION

1. Inspect

-to determine the serviceability of appropriate technical publications, an item by comparing its physical and mechanical.

2. Repair

-the application of maintenance function at the indicated category services.

3. Replace

-the act of substituting a service the appropriate sub column lowest level of able like type part, sub assembly or module maintenance authorized to perform the function.

4. Install

-the act of emplacing, seating or maintenance functions, it is solely for purpose of fixing into position an item, part, module having the group numbers.

5. Adjust

-to maintain within prescribed components, limits by bringing into proper or exact position or by setting the operating characteristics to the specified parameters.

6. Service

-operations required periodically to build is the highest degree of material maintenance applied to Army equipment.

7. Align

-to adjust variable elements group numbers, the purpose of which is to of an item to bring about optimum or desired identify components, assemblies, sub assemblies and modules with the next higher performance.

Basic of Selecting Maintenance Function

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Selecting and appropriate maintenance strategy and choosing one or more techniques becomes a simpler decisions when the failure modes are understood.

A schematics of the decisions process in selecting an appropriate maintenance strategy.

- a. Prepare for the analysis
- b. Select the equipment to be analyzed
- c. Identify functions
- d. Identify functional failures
- e. Identify and evaluate (categorize) the effects of failure
- f. Identify the causes of failure
- g. Select maintenance tasks

System Approach to Maintenance Function

- a. Identification of the needs of maintenance related activities, which may include repair, reconditioning or replacement of components.
- b. Analyzing the requirements of the above needs.
- c. Determine the functional procedures for maintenance task selection.
- d. Outlining a reporting and controlling procedure of all maintenance related activities.
- e. Development of supporting services and infrastructure for efficient execution of maintenance functions.
- f. Determining the cost account procedures for optimizing maintenance related expenditures.
- g. Adopting a policy for training of maintenance staff and assurance of quality.

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Breakdown Maintenance

- Repairs or replacement performed after a machine has failed to return to its functional state following a malfunction or shutdown.
- Usually assigned to machines with backups in place, or machines which are of low importance to production.

Corrective Maintenance

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- Maintenance which is required after an item has failed or worn out to bring it back to the working order.
- Detect, isolate and rectify a fault so that the failed equipment or machine can be restored to its normal operable state.

Preventive Maintenance

- Maintenance performed while a machine is still in working order to keep it from breaking down.
- Lubricating, tightening and replacing worn parts.

Advantages:

- Less standby equipment is needed
- Cost of repairing is reduced
- Lowers wear and tear of a machine and other equipment
- Increase the life of the machine
- Provide greater safety and protection to the workers

Reliability Based Corrective Maintenance

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- Maintenance which replaces these no value task with specific maintenance that prevents failures and prolongs the useful life of plant assets.

Advantages:

- Increase in cost effectiveness, machine up time, and a greater understanding of the level of risk that the organization is managing.

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Predictive Maintenance (PDM)

- Activities that detects changes in the physical condition of equipment in order to carry out the appropriate maintenance
- classified into 2: condition based predictive maintenance & statistical based predictive maintenance

Advantage

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- Increased equipment lifetime
- increased plant safety
- Fewer accidents with negative impact on environment.
- Optimized spare parts handling.

Reliability Centered Maintenance (RCM)

- Process to ensure that assets continue to do what their users require in their present operating context.
- Generally : used to achieve improvements in fields such as the establishment of safe minimum levels of maintenance, changes to operating procedures and strategies and the establishment of capital maintenance regimes and plan

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Advantage

- Greater safety & environment integrity
- Enhanced understanding of equipment
- Increased availability & reliability
- Greater maintenance efficiency
- Longer equipment life
- Better teamwork
- Complete maintenance strategy

Process Of (RCM)

- Select asset based on critically
- Define boundaries
- select & train the facilities team
- Perform audit of recommendation
- Prioritize & implement recommendation
- Measure result
- Update RCM document to include changes.