SMS: Spares Management Software

PRODUCT PROFILE

Purpose of Software:

➢ A decision support tool for setting inventory levels for critical, slow moving and high cost parts
➢ Forecasts inventory levels for in-house repair, sub-contract repair and new purchases based on the required reliability, cost and equipment availability
➢ Aligns spare parts replacement decisions with the Equipment Reliability process and the current business situation (risk and cost)
➢ Combines science and economics to set inventory levels according to operations and performance needs, not just budgets
➢ Facilitates placement of final orders for discontinued parts

Benefits:

➢ Improved decision making, reduced cost of spares
➢ Integrates risk and cost calculations
➢ Forecasts timing of replacements for current spares
➢ Sets the Spares levels required to meet multiple replacement conditions and % reliability requirements:
  - instant reliability (spare is available when called for)
  - interval reliability (spare is available during the period being planned)
  - cost minimization
  - availability of the process or production unit
  - given a stock size, the availability during the period being planned
➢ Accommodates variable failure intervals, variable lead times, variable repair times
➢ Provides cost calculations for repairable and non-repairable spares
➢ Complementary to RCM
➢ Easy to use data entry screens requires little training
➢ Easy to read graphical output shows results at a glance

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Input Data:

- The required planning period
- The type of calculation required – instant or interval reliability, availability or cost minimization
- The % level of reliability required
- The cost of the spares – new and repaired – regular cost, emergency cost, holding cost, cost of capital, future value of unused spares
- Failure rates for the spares
- Lead times for the new and repaired parts

Outputs:

- Risk and cost calculations for Repairable Spares
- Risk and cost calculations for Non-Repairable Spares
- Minimum level of Spares requirements for Interval reliability at user determined levels from 50% to 99.99%
- Minimum level of Spares requirements for Instant reliability at user determined levels from 50% to 99.99%
- Availability calculations at given levels of Spares

Case Study:

Randomly failing motors

1. Plant Availability at 95%: = 0 spares
2. Plant Availability at 99%: = 2 spares
3. Instant reliability (always one when wanted): 95% reliability = 4 spares
4. Cost minimization: = 6 spares
5. Interval reliability (never run out): 95% reliability = 7 spares

Investment required:
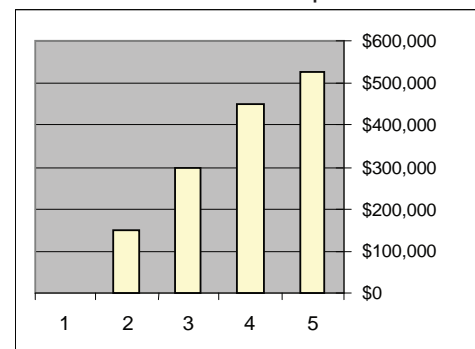
Target Industries:

- Any industry where Spare Parts and Replacement costs are a significant part of operations
- Any heavy industry such as mines, steel, metals processing, chemicals, oil and gas petrochemical, pulp and paper
- Discrete manufacturing facilities – automotive, electrical, components, furniture, tires, plastics etc
- Process manufacturing – pharmaceuticals, food and beverages
- Municipal, state and federal departments, military, customs, airports, container ports
- Power utilities, telecom, gas, electrical, water distribution companies