Spare Parts and Materials Management Course Description and Outline

Maintenance materials are a large part of any plant’s operating costs and not having what is needed, when it is needed, impacts productivity, reliability, morale and the bottom line. Reliability Based Spare Parts and Materials Management is a unique seminar that provides real solutions to materials management and inventory problems. You’ll take away knowledge and tools to dramatically improve your spare parts and supplies management.

1. Introduction
   - Course content and training objectives
   - Impact of materials management on overall maintenance performance
   - Impact of materials management on trades productivity
   - Organizing for effective materials management
   - The partnership between Stores, Purchasing, Maintenance, Engineering and Operations
   - Skills and qualifications for materials professionals - purchasers and inventory managers
   - Business processes, including approvals
   - Communication and continuous improvement
   - The roles of Planners and Buyers
   - The difference between maintenance materials and other types of inventory management
   - The importance of good materials information management systems
   - The critical importance of materials data accuracy
   - The role of the materials data manager
   - The importance of giving all users access to materials information, including the internet
2. Benefits of good maintenance-materials management
- Increased plant reliability
- Reduction of planning work load - up to 70%
- Reduction in inventory-replenishment purchase orders - up to 60%
- Reduction of manually-prepared direct purchase requisitions - up to 90%
- Increased maintenance productivity
- Improved service rate
- Reduced inventory
- Reduced theft
- Reduced maintenance costs
- An ability to share materials with other operations, where applicable

3. Alignment of objectives
- Balancing of KPI's
- Encouraging the right behavior
- Encouraging cooperation among the partners

4. Integration of materials management and reliability management
- The right materials at the right time
- Integration of information systems
- Ability to generate reliability KPI's

5. Inventory-management basics
- Definitions
- Inventory-management tools
- Inventory graphing
- Automation of inventory management
- Use of "safety stock" option in CMMS's
- The use of economic order quantities (EOQ)
- Dual reorder points
- Layouts and locator systems
- The difficulty of measuring "service rate"
- Continuous improvement through a simple feedback process
- Physical storage
- Physical storage environment
  - Open or closed Store room?
  - Receiving and inspection
  - Return-to-Store procedures and quality control
  - Racks and bins, and their identification
  - Satellite storage
  - Free-issue stores
  - Vendor-managed storage
  - Project and direct-purchase storage
  - "Boneyards"
6. Integration of materials information
   - Generic materials files
     - Inclusion of plant standards
     - "Flagging" of SKU's
     - Standards for SKU file content
     - The use of supplementary fields
   - Equipment-specific materials files
   - Application of SKU's to equipment items
   - Links to technical information
   - Special tools

7. Integrated zero-stock catalog
   - Very high value opportunity
   - Can reduce manually-generated purchase requisitions by 90%
   - Protects plant standards
   - Ensure use of supply agreements
   - Eliminates research and typing
   - Discourages uncontrolled inventory
   - Catalog management

8. Database principles
   - The four key steps in database projects
   - Poor data is the most common reason for lack of success with CMMS's
   - Importance of planning and training in database projects
     Importance of simple and successful searching
   - Importance of a "data manager"
   - Importance of defining fields, structuring data and using rigid database logic
   - Use and value of available fields
   - Training of users in searching techniques
   - Ways to simplify searching, with existing data
   - Use of database fields for many functions, such as grouping of SKU's for various purposes

9. Equipment selection
   - Reliability starts before equipment selection
   - Design and selection has the biggest impact on life-cycle cost
   - Involve the right people in equipment selection
   - Apply reliability principles to materials management
   - The importance of "maintainability" and "inspectability"
10. To stock or not to stock?
- Maintenance definitions
- Reliability basics
- Follow a logical process for all stock/don't stock decisions (20 factors to consider)
- Apply reliability and risk-management principles
- Inventory can be scanned and analyzed to optimize stock
- Use the rationalization of inventory as a leading KPI
- Management of new stock requests

11. Anti-friction bearings
- Focus of most reliability efforts is to extend bearing life or to detect the earliest stages of bearing failure
- Bearing usage index as a simple reliability KPI
- Bearing "engineering" knowledge necessary for good management

12. Plant standards
- Apply to supplies as well as spare parts and components
- Set carefully, by the right people
- May be very difficult to change
- Standards must reflect criticality
- Communicate to everyone who originates purchase requisitions
- Integration of plant standards with SKU information
- Manage trials
- The threat of e-commerce to plant standards

13. Spare parts lists (or "Bills of Materials")
- A numbered equipment hierarchy is a pre-requisite
- Hierarchy continues below the equipment location level, in assemblies and sub-assemblies
- The use of component tracking ("serialization") and its value
- The inclusion of equipment-specific information in parts lists
- Key fields for parts lists
- Special equipment numbers (valves, piping, etc.)
- Pareto analysis for achieving high early value when building parts lists
- The use of parts lists for identifying obsolescence

14. Interchangeability of parts
- Interchangeability management is seldom used, but has value
- Location of interchangeable parts
- Interchangeability principles
- ISO fits and tolerances and standard bearing fits
15. **Use of non-OEM parts**
- Requires a quality control process, which reduces savings
- Difficult to meet interchangeability requirements
- Some risks in making parts without understanding assembly design details
- Decisions on substitution are Engineering, not Purchasing decisions

16. **Obsolete and surplus stock**
- Good records required to safely identify obsolete stock
- Avoid building junk piles
- Question the value of salvaging used materials in-house

17. **Repair-and-return management**
- Makes maintenance-materials management unique
- Special business process required (tracking, tagging, etc.)
- Special discipline required for serialized items

18. **Assigning a dollar value to inventory**
- Repair-and-return items can be valued in several ways
- Process must be standardized if parts are shared between operations
- Follow accepted accounting practices, and select process that encourages the right behavior

19. **Work kits and delivery systems**
- Required to achieve planning objectives
- Requires a strong partnership
- Need facilities for material staging for 1 to 2 weeks scheduled work
- Requires special discipline and procedures to be effective
- Quality control process required for returning items to the Storeroom

20. **Other possible Storeroom services**
- Tool control
- Technical library

21. **Summary of CMMS requirements**

22. **Other issues**
- Is outsourcing of materials management an option?
- Pros and cons of centralizing warehousing for multiple plants
- Sharing of materials between plants

23. **Conclusion**
- Focus on value, service and measurement of results
- The potential for increased value is high