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Equipment and Tool Control Procedure

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1.0 PURPOSE

The objective of this document is to provide guidelines and best practices to the Entity to manage and define the components of an effective Equipment and Tool Control Procedure and support facility maintenance activities. In addition, its purpose extends to promote industry-accepted standards and highlights the importance of a control process across all facilities.

The Equipment and Tool Control Procedure enhances both Quality and Safety Management Systems by assigning functional values to specific essential component items of the Asset Management portfolio. Managing this classification of "assets" with due diligence demonstrates best practices and indicates an understanding of the value in equipment and tool maintenance. Alignment with the Equipment and Tool Control Procedure shall significantly improve financial efficiencies. This ensures that the condition of equipment and tools is maintained to an acceptable standard and offers a safe, organized, efficient, and reliable approach to work/activities.

2.0 SCOPE

This document is designed to meet the needs of Facility Managers (FM) accountable for Safety and Quality Management Systems. Equipment and tools required or utilized for Operations and Maintenance activities should be regarded with the same diligence as applied to other assets. This is to ensure a prepared lifecycle profile and the integrity concerning the safety and quality of work.

Equipment and tools with a high value and / or which require scheduled maintenance are considered essential in terms of Asset Management, and their inclusion in the Asset Register (AR) is therefore justified. In these circumstances, the requirements and deliverables of the Asset Management System (AMS) shall provide the in-life support activities. This will ensure the integrity of equipment and tools at a level consistent with all other assets in the register.

Therefore, this document covers the items of equipment and tools that fall outside of the Asset Register and Asset Management System protocols.

Examples of Equipment and Tools that shall reside in the Asset Register are listed below:

- Non-Portable (fixed): Lathes, pillar drills, bead blasters, welding equipment, vehicle hoists, generators, powered cleaning equipment, cranes, winches, and beam block and tackles.

- Portable: Vacuum cleaners, screening, scaffolding, engine hoists, Mobile Equipment Work Platforms (MEWP), compressors, generators, transformers, ladders, engine starters, forklifts, harnesses, and breathing apparatus.

Examples of Equipment and Tools that reside outside the Asset Register and shall require a control procedure, but not limited to, the following:

- Hand Tools
- Electric Hand Drills
- Electrical Testing Equipment
- Calibrated Tools
- Gauges
- Locking and Security Devices
- Harnesses and Straps
- Access Equipment
- Lifting Equipment

3.0 DEFINITIONS

Term	Definition
Equipment	Necessary items for a particular purpose, including material, fittings, devices, appliances, luminaries, apparatus, machinery, and related articles utilized as a part of, or in connection with an engineering installation.
Hazard	An object, physical effect, or condition with the potential to cause harm to people, property, or the environment.
International Organization for Standardization	A standard-setting body composed of representatives from various national standards organizations.
Machinery	An assembly fitted with, or intended to be equipped with, a drive system other than directly applied human or animal effort, consisting of linked parts or components, at least one of which moves, and which are joined together for a specific application (as defined under the Machinery Directive 2006/42/EC).
Operative	End-user/operator of the equipment.
Register	An official record/entry made on a list/directory to record relevant details/data.
Acronyms	
AMS	Asset Management System
AR	Asset Register
E&T	Equipment and Tool
FM	Facilities Management
IT	Information Technology
ISO	International Organization for Standardization
KSA	Kingdom of Saudi Arabia
NMA&FM	National Manual of Assets and Facilities Management
NDT	Non-Destructive Testing
O&M	Operations and Maintenance
OEM	Original Equipment Manufacturer
OSHA	Occupational Safety and Health Administration
PAT	Portable Appliance Testing
PPE	Personal Protective Equipment
SWL	Safe Working Load

Table 1: Definitions and Acronyms

4.0 REFERENCES

- National Manual of Assets and Facilities Management – Volume 2 Chapter 3: Asset Register Procedure
- Machinery Directive 2006/42/EC
- National Manual of Assets and Facilities Management – Volume 12 Chapter 2: Risk Management Procedure
- National Manual of Assets and Facilities Management – Volume 5, Chapter 19: Measuring & Test Equipment Calibration and Usage Procedure

5.0 RESPONSIBILITIES

Role	Description
Competent Person	Responsible for identifying existing and predictable hazards in the equipment and tools and has authorization to take prompt corrective measures to eliminate them.
Maintenance Team	Responsible for operational ownership of repairs, replacements, alterations, or assets, equipment, tools/systems.
Facility Manager	• Implement an Equipment and Tool Control Procedure • Prepare plans for Equipment and tools repairs, including frequency and calibrations. • Ensure that the procedures are aligned with any relevant Government Regulations and NMA&FM guidelines. • Identify/source appropriate resources to perform the exercise. • Manage the delivery and utilization of equipment and tools for operational activities in accordance with the agreed processes. • Responsible to ensure the maintenance of records and control procedures for any E&T repairs and calibration requirement.
In-House Resource/ Contractor	• Understand, develop, and prepare requirements for specific E&T for repairs and calibrations. • Competent personnel to conduct appropriate E&T condition inspections. • Follow agreed procedures in delivering surveys – specifically concerning access and shutdown requirements. • Safely perform assessments utilizing appropriate tools, equipment, and Personal Protective Equipment (PPE). • Provide detailed reports and recommendations on critical inspections of E&T with financial implications. • Ensure storage and security protocols for E&T are followed.

Table 2: Responsibilities

6.0 PROCESS

6.1 Equipment and Tool Asset Register

In order to implement an Equipment and Tool (ET) Control Procedure, a register of all equipment and tools maintained within the Facility Management department should be compiled. As with any Asset Register (AR), this list shall include all classifications and relevant attributes to establish equipment and tools condition, prioritization, and criticality to the facilities operation. All items will possess a specific lifecycle profile that will vary and should also recorded in the register.

Items that require a control procedure should include, but not limited to, the following:

- Hand Tools
- Electric Hand Drills
- Electrical Testing Equipment
- Calibrated Tools
- Gauges
- Locking and Security Devices
- Harnesses and Straps
- Access Equipment
- Lifting Equipment

In order to capture details pertaining to items that reside outside of the AMS and AR, the local Operations and Maintenance (O&M) management shall tabulate a list detailing the relevant information for each item.

An example of a Tool List Schedule is referenced in Table 3.

Process Owner:		Date Last Checked: _____			Date for Next Audit: _____		Signature:	
Item	**Description**	**Classification**	**Serial Number**	**Condition**	**Calibration, Inspection, or Testing Required?**	**Minimum Inspection Frequency**	**Last Tested**	**Next Test Date**
1	Power Drill 250W	Electrical	1237289 AHB	Good	PAT	Twelve Months		
2	Dictaphone	Electronic	5798d	Fair	No	Twelve Months		
3	Vernier Gauge	Mechanical	Q12839 572	Good	Calibration	Two years		
4	Leaf Blower	Mechanical	Mu7405 87	Poor	No	Annually		
5	Charger	Electrical	ad68293	Good	PAT	Annually		
6	Handheld Radios	Electrical	R19339 82	Fair	Supplier Managed	XX XXX XXXX		
7	Inspection Lamp	Electrical	N/A	Good	PAT	Annually		
8	Extension Lead	Electrical	N/A	Good	PAT	Annually		
9	Vacuum	Electrical	rs675	Fair	PAT	Annually		
10	Micrometer Set	Mechanical	Abdul1	Good	Calibration	Two Years		

Table 3: Tool List Schedule

The individual columns outlined in Table 3 are described in further detail:

1. **Description:** The description should be concise and brief.

2. **Classification:** The item will be classified either as mechanical or an electrical item. This provides relevant information for the category of inspection (i.e., Portable Appliance Testing (PAT), calibration, or both).

3. **Serial Number:** The serial number serves as a unique identifier and enables the item to be traced. Serial numbers are mandatory for E&T items that are sent for calibration and testing, and details should be recorded on certification. If the item does not possess a serial number from the Original Equipment Manufacturer (OEM), it should be engraved, etched, or marked with a permanent identification number.

4. **Condition:** The condition of any E&T item is critical in assisting with decision processes. The lifecycle plans for E&T items that reside outside of the AMS and AR are at the discretion of Engineering and Operational Management (e.g., management may conclude that they want to renew all electrical extension leads once every two years, or they may make decisions solely based on E&T condition grade. The baseline dictates that all E&T items are fit-for-purpose and have suitable date certifications).

5. **Calibration, Inspection/Testing Required:** Certain lower value E&T shall be subject to compulsory testing and calibration; this requirement must be highlighted in the E&T Register.

6. **Minimum Frequency of Inspection:** This is governed by information from the OEM and / or the calibration schedule, and the frequency of inspection for E&T items that are outside of this category is at the discretion of local O&M Management.

7. **Last and Next Test Dates:** These columns provide the schedule for maintenance, testing, and calibrations. The dates specified in these columns must be considered when scheduling maintenance on specific E&T items to ensure that they are available, and are not being tested/calibrated off-site. This is important, if calibration or Safe Working Load (SWL) tests are to be performed, additional resources may need to be considered and planned.

6.2 Ownership and Governance

Ownership and Governance is essential to the overall success of this process. The Equipment and tool control procedure should assign ownership to individuals who are competent in the subject matter. Individuals who are assigned responsibility should have the necessary management and leadership skills to maintain the disciplines required by the procedure.

In accordance with ISO Quality Management System 9001 - 2015, Equipment and Tool register audits should be performed quarterly to ensure lists reflect the status of items maintained at specific locations.

6.3 Storage and Security

Storage and Security of equipment and tools should form part of the maintenance strategy so that essential items are controlled and accounted for accordingly. Figure 1 illustrates a best practice approach for the proper storage of hand tools. Demonstrating and observing appropriate control and storage practices and techniques is essential to an Entity's operation. The benefits and advantages of such methods include resource optimization and cost control. It is best practice to perform a tool check at the end of a shift to ensure all E&T is in its correct storage location.

Figure 1: Example of Best Practice E&T Control – Storage

Each item should be color-coded or engraved with a unique code identifying its owner and designated storage location (illustrated in Figure 2). Items should be returned to their proper storage location after use.

Figure 2: Engraved Tools

Best practice guidelines recommends to keep items secure in lockable containers/toolboxes and to perform a "tool check" at the end of each work shift. Following the confirmation that items have been returned to

their appropriate storage locations, the container/toolbox shall be securely locked. Keys must be stored in an accessible and secure location (i.e., near the O&M Manager's office) and should be regularly checked and available for regular use/ emergency requirements.

Specialist equipment (e.g., lifting equipment, mobile platforms, or electrical test items) which require training and/or certification should only be issued to competent and certified personnel. A process to ensure that competence is proved before the equipment is released to an individual should be included with any procedure. The procedure can include the details for Certification/training courses/refreshers for equipment and tools securely held.

6.4 Equipment and Tool Replacement Program

Items that require periodic replacement and shall be controlled by an Equipment and Tool Replacement Program. When creating a program the procedure writer should consider the following points:

- Estimated Useful Life
- Current Condition
- Current Expenditure on Maintenance
- Obsolescence

The Replacement Program should perform the following:

- Forecast Appropriately (i.e., five years)
- Cover all Equipment Items
- Annually Updated
- Discussed During the Site's Budget Development Process

The equipment and tool register should be updated when items are replaced, damaged, waste and redundant tools must be disposed of in a responsible manner. Should the equipment or tools be considered a hazardous waste product then further advice and information can be found within National Manual of Assets and Facilities Management Volume 5, Chapter 17 Waste Management Operations.

In accordance with best practice guidelines retaining tools past its useful life is not recommended (e.g., if a cleaning cradle has significant damage/corrosion, it is recommended that the apparatus be replaced if repair costs exceed agreed thresholds). Efficiency and performance can be adversely affected by the asset life cycle with the potential to cause harm.

6.5 Managing Deployed Equipment

A process which records the details of Equipment authorized by the owner/manager to be relocated off-site should include the Following information:

- Item Identification Number
- Description and Brand of Equipment
- Name and Signature of the Person Borrowing the Item (including company details)
- Date Taken and Return Due Date
- Return Date and Signature of Person Receiving the Equipment
- Returned Items (including accessories and should be in good working order).
- Damages/Deficiencies should be reported.

6.6 Equipment and Tool Condition

All Equipment and tools classed as maintainable items within the register should be maintained as per the manufactures instructions. This may not always be an onerous task as many of the items will require simple inspections before use. A more robust Non-Destructive Test (NDT) can be performed periodically to ensure absolute integrity.
The condition of equipment and tools can have a direct impact on the safety and quality of work, and best practice guidelines encourage that items should be maintained in the best possible condition (e.g., cutting, carving, or chiseling tools are safer if kept sharp. In addition, a hammer head and its handle are much safer

if inspected before use and by competent personnel. These items should be examined by a competent person on return also to ensure that they are in a safe condition before storing them in the cabinet. If there is any doubt, then the item should not be used until further guidance is sought.

There is a professional expectation, from management, that the last person to utilize an item is responsible for its condition (before storage). This responsibility includes the reporting of defects or recommendations for the items to be taken out of service. This element can be challenging to govern without strict adherence to intuitive best practices, and therefore requires effective leadership to maintain equipment and tool condition standards.

Circumstances, when an equipment or tool item is not safe/suitable for use and is pending rectification/repair work, is probable. It is therefore required of the procedure, to tag the item, provide a method to alert personnel that continued use is inadvisable. This process should then lead to the items then being repaired or replaced.

Figure 3: Out of Service Tag

Figure 3 illustrates an "Out of Service Tag," when attached to an E&T item, it is deemed unsafe/unsuitable for use. An item is considered not safe or suitable for use if the following are observed/reported:

- Expired Calibration Certificate
- Item is Broken, Blunt/Bent
- Failed Electrical Test

Out of Service Tags (Figure 3) are to be made available by the asset owner and are to be stored in an accessible location within the maintenance office. They shall be attached to unserviceable items by the Competent Person. Failure to mark unsafe/unsuitable items could place colleagues/personnel in danger.

6.7 Equipment and Tool Quantities

The inventory of equipment and tools held and controlled by O&M departments shall reflect the requirements of that location, and the quantities shall be evaluated by management. An abundance of items is both uneconomical and a challenge to monitor and control. Similarly, holding insufficient items to cater to the requirements of the operation can potentially damage the asset's condition, and shortcuts are often taken with incorrect equipment used for tasks.

Management should include within the procedure the responsibility for the effective and appropriate distribution of equipment and tools to enable the O&M of assets. It is recommended that periodic audits be conducted by management to assess current tool inventory levels and recommend replacements or additional future item requirements. Items that require additional funding will require appropriate justification.