Methodology for Critical Equipment Maintenance

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Agenda

DEFINITION

EXAMPLES

RESPONSIBILITY

COMMON AVAILABLE RESOURCES

RECORDKEEPING REQUIREMENTS

CRITICAL EQUIPMENT IDENTIFICATION PROCEDURE
DEFINITION OF CRITICAL EQUIPMENT:

- **CRITICAL adjective** ˈkri-ti-kəl
  
a : of, relating to or being a state in which or a measurement or point at which some quality, property, or phenomenon undergoes a definite change or priority

- Any piece of equipment or machinery that could significantly impair the ability to safely meet corporate business objectives, quality levels or environmental standards as identified in the business plan.
EXAMPLES OF CRITICAL EQUIPMENT

**Highly Critical – Governmental Regulation:**
- Waste Water Treatment Plant
- Sludge Disposal System

**Highly Critical - Central System:**
- Chilled Water
- Compressed Air

**Critical - Throughput Affected:**
- Cooling Towers
- Electrical Substations

**Critical - High Cost Impact:**
- Substation Transformers
- Chillers
FACILITY RESPONSIBILITY

- EACH FACILITY HAS THE RESPONSIBILITY TO MANAGE THE MAINTENANCE OF THEIR EQUIPMENT

  - Equipment with associated tasks and frequencies should be documented within a Computerized Maintenance Management System (CMMS)

  - Critical Equipment should be designated within CMMS in one or more of the four categories:
    - Highly Critical – Government Regulation (e.g. safety)
    - Highly Critical - Central System
    - Critical - Throughput or Quality Affected
    - Critical - High Cost Impact
COMMONLY AVAILABLE RESOURCES FOR PM TASKING REQUIREMENTS

- Emergency Response Plans
- Manufacturing Start-up Procedures
- Manufacturing Engineering’s Risk Analysis
- Security Procedures
- Environmental Requirements & Permits
- Global Supply Chain Procedures
- Original Equipment Manufacturer’s Operation Manuals
RECORDKEEPING REQUIREMENTS

- O&M personnel ensure that critical equipment is correctly identified and listed. The respective maintenance frequencies must be correct and captured within CMMS.

- O&M personnel must ensure that the tasks captured in the CMMS are comprehensive and complete as to what is needed to have the expectation of uptime.

- For continuous improvement, all tasks for critical equipment need to be systematically standardized (e.g. Task Instruction Sheets).

- O&M personnel are responsible for execution of all maintenance work and the respective record keeping.
Critical equipment is any piece of equipment which, if its function failed, would compromise regulatory requirements or the ability to keep the property safe, stop production, or negatively impact quality.

A piece of equipment is not usually considered “critical” if redundancy is available.

- If an extended outage is encountered this may be cause for reassessments & revisions to the Critical Equipment List.

Critical equipment process and equipment selection follows the Maintenance Process.

- The record to document the rationale or calculation to determine whether an asset is “critical” is the Asset Criticality Calculation Record Sheet
QUESTIONS