International Journal of Management, IT & Engineering
Vol. 9 Issue 3, March 2019,
ISSN: 2249-0558 Impact Factor: 7.119
Journal Homepage: http://www.ijmra.us, Email: editorijmie@gmail.com
Double-Blind Peer Reviewed Refereed Open Access International Journal - Included in the International Serial Directories Indexed & Listed at: Ulrich's Periodicals Directory ©, U.S.A., Open J-Gage as well as in Cabell's Directories of Publishing Opportunities, U.S.A

Quality Assurance audits in Asset Maintenance

Muhammed Shiyas.K.M

Abstract

Quality assurance Auditin asset maintenance and management system plays a key roleto make sure thequality of the asset maintenance. Qualityassurance is one of the major part of quality management system. Quality assurance is focused on providing confidence that quality requirements are fulfilled for the asset maintenance. The quality assurance systems must be commensurate with the Company business objectives and business model. Top management commitment and its active involvement are critical in order to ensure at all times the adequacy, suitability, effectiveness and efficiency of the quality systems. Effective and efficient quality assurance systems will help to increase the life and performance of the assets which will overallaffects financial and social benefits of the Company. It is advisable for all the organizations to establish, manage and monitor their qualityassurance systems and their integral standard operating procedures and other quality documents to provide high-quality maintenance and services to occupy the customer needs and expectations.

Keywords: Quality Assurance, Audit, Maintenance, Asset

Introduction

Quality assurance (QA) is a systematic process of determining an asset meets specified requirements in asset maintenance and management system. It is also a process of verifying whether a product or service meets required specifications and customer expectations. QA is a process-driven approach that facilitates and defines goals regarding the maintenance /services required for an organization. Organizations often designate separate QA departments, which increases customer confidence and credibility and improves efficiency and overall work processes. Quality assurance plays a major role in facilities management especially in the asset maintenance and management system. Quality assurance (QA) is one of the ways of preventing mistakes and defects in asset maintenance and avoiding problems when delivering solutions or services to the customers.

Literature Review

It is very important to maintain the Quality of the maintenance of the assets. It will help mainly to improve the performance and life of the assets. According to the study, most of the organizations are performing the Quality Assurance audits on the asset maintenance but the way performing is not in a standardized form, i.e. doesn't have a Quality Assurance Departments and they are performing in way like a normal inspection on the assets to make sure the Quality of the maintenance of the assets. This study will provide an outline to the Quality assurance audits on the asset maintenance.

What is a Quality Assurance System

A quality assurance system is defined as the organizational structure, responsibilities, processes, procedures and resources for implementing quality management. Quality management includes those aspects of the overall management function that determine and implement the Company quality policy and quality objectives.

What is Quality?

Quality is the standard of something as measured against other things of a similar kind; the degree of excellence of something.

What is Assurance?

Assurance is a positive declaration on a product or service, which gives confidence. It is certainty of a product or a service, which it will work well. It provides a guarantee that the product/service will work without any problems as per the expectations or requirements.

What is Quality Assurance?

Quality Assurance is popularly known as QA, is defined as an activity to ensure that an organization is providing the best possible product or service to customers. QA focuses on improving the processes to deliver Quality Products/Services to the customers. An organization has to ensure, that the processes are efficient and effective as per the quality standards defined by the company based on its objectives.

What is Quality Assurance Audits?

A quality assurance audit is a process conducted by either an internal or external auditor that helps to ensure an organization's systems are in place and is being followed.

In asset maintenance and management system, it is a process conducted by the internal/external qualified team member of an organization to ensure the quality of the maintenance of the assets.

Asset Maintenance and Management System

An Asset Maintenance Management System (AMMS) is a system designed to program & record an organisation's maintenance activities. The Computerised Maintenance Management System (CMMS) will play a great role to support the activity.

AMMS functionality is increasingly being incorporated in to Asset Management Systems.

The current Asset Management System Functional Specification includes a number of maintenance management related clauses, including the ability to:

- Generate reports detailing all maintenance and other works carried out on an asset over any specified period of time.
- Record customer requests, Maintenance history, Asset Performance
- Plan and Execute various maintenance activities against an asset or asset component.
- Maintenance Planning,scheduling,etc

Importance of Quality Assurance in Asset Maintenance and Management System

Quality Assurance programs help QA auditorsto understand the maintenance conditions, set priorities, and to analyse the condition of asset. There will be guidelines available to assist in the

creation of QA , but no comprehensive resources on specific quantitative measures for maintenance quality.

The importance of properly established and managed quality assurance systems with their integral well-written SOPs and other quality documents for the achievement of Company business objectives .They help in the success by assisting the Company to achieve high-quality processes, procedures, systems, and people, with eventual high-quality products and services and enhancement of the following:

- Reduce the Need for Corrective Maintenance
- Reduce the risk
- Achieve the asset performance
- Standardize Management Processes
- Manage Assets and Equipment Across Multiple Locations
- Optimize Planning and Resource Use
- Increase the Asset Performance and Life of the asset
- Reduce the Maintenance Costs
- Company performance and reputation.
- Understanding and motivation of employees toward the Company quality policy and business objectives, as well as participation in continual quality improvement initiatives.
- Alignment of processes with achievement of better results.
- Customer satisfaction, Operational results such as revenue, profitability, etc

What is a Quality Assurance System in Asset Maintenance?

The Quality Assurance System onAsset Maintenance defines the policies, standards, scope, structures, and processes for the performance of the Asset management mission, including maintenance, housekeeping, grounds, environmental, and all services related to the assets. The Asset Maintenance and Management System describes the framework to accomplish mainly the below four essentials:

1. Define the requirements, processes and standards

2. Direct the resources to perform work to standards.

3. Develop the technical, material, and administrative support infrastructure.

4. Develop the process for continuous improvement.

A Maintenance Management System creates an equation between a Service-Level Agreement (SLA) and the Facility Management Plan (FMP). The SLA also defines the relationship between the Maintenance Contractor/Team and the client/asset owner.

For the FMP to be useful and credible, maintenance managers and their customers must formulate it together. The client's objectives (set forth in the service-level agreements) determine the skills, staffing, resources, and support required for demand and productive maintenance at given response levels. If the maintenance mission is highly focused on proactive maintenance activities, then the customer must cooperate with facilities' objectives, priorities, and processes. It is important for the FMP to be as specific as possible to coordinate objectives, standards, performance measures, and costs. Collaboration generates valid expectations and mutual responsibilities.

FMPs also set targets for qualitative goals, such as implementing Computerized Maintenance Management Systems (CMMS) for a specific asset to improve reliability, initiating preventive measures to reduce corrective work for targeted activities, standardizing equipment manuals or other documents to streamline information retrieval, or establishing a dedicated maintenance team for critical operations to improve uptime. A Facility Quality Assurance Management System structures the facility management team's commitment to continuous improvement. It boosts management's confidence that investments in maintenance are spent creatively and beneficially, with full accountability. It spotlights facilities managers as leaders within the mainstream of the enterprise's quality processes and business strategies.

Quality Assurance System is the act of overseeing all activities and tasks needed to maintain a desired level of excellence. This includes the determination of a quality policy, creating and implementing quality planning and assurance and quality improvement.

Asset Management Strategy and Quality Policy

To implement strong practices, facility management team must first define their current business strategy: the vision, mission, strategies, scope, systems and applicationthat frame every decision. The traditional view of the facilities function is to fix things that break, keep things from breaking, keep things looking good, and do whatever it takes.

Prior to make the business strategy the facility management team must ask the below Questions Themselves. It will help to give a clear picture on their vision, Mission and Strategies. The answers to some pertinent additional questions can lead to more robust programs

- Who is the customer?
- Who are the stakeholders?
- What is the true effect of maintenance on the performance of the enterprise?
- What is facility management's role in the enterprise's sustainability strategy?
- What is the present cost of operations and maintenance vs. industry standards and best practices?
- What are the direct and consequential costs of equipment downtime?
- How long does it take to perform routine and recurring maintenance and service tasks, how frequently are they done, and to what standards?
- What efforts should be focused on activities to reduce breakdowns; when should equipment be repaired only after it breaks?
- What internal and external maintenance resources, including labour, material, and technology, are available?
- Are these resources sufficient to support a proactive, or even a reactive, approach?
- How to develop a Quality Assurance system?

These questions encourage the below,

- Operating principles that define the value of work
- The roles of management
- Supervision
- The workforce
- The applications for technology
- The sources of waste and means of extracting it from the operation

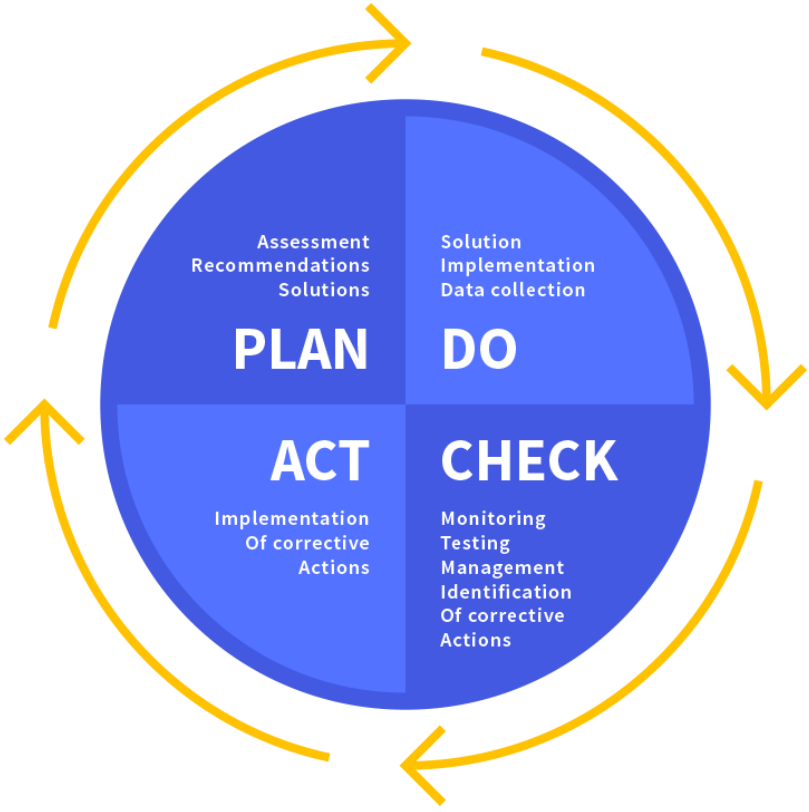
The investment needed to develop and install the quality systems, train the maintenance workforce, and teach management how to measure the results is substantial: It requires a clearly articulated commitment and business case to develop Lean, green operations and maintenance as a core business practice. Then, facilities management can graduate from an incidental cost to a strategic element of corporate asset management. Here, the Quality Assurance system helps to achieve the Objectives of the Quality Policy of the company.

How to perform the Quality Assurance Audits after Completing the Asset Maintenance

Quality assurance is the responsibility of the quality assurance department. The mission of a quality assurance department is to provide an effective and efficient quality assurance system and counsel for the operational units. The quality assurance department must be manned by an adequate number of dedicated and adequately qualified and trained personnel with well-developed interpersonal skills. The well-developed interpersonal skills will provide the quality assurance personnel with persuasive, tactful and resilient qualities generally required of them. The quality assurance department must operate independently from the operational units and it must regularly perform quality review activities (self-inspection audits/internal audits) to ensure compliance within operational units with Company quality standards, good working practices and local, national, regional and international legal, ethical and regulatory requirements.

Quality assurance Audits has a defined cycle .The phases of this cycle are:

- Plan
- Do
- Check
- Act



These above steps are repeated to ensure that processes followed in the organization are evaluated and improved on a periodic basis.

Plan will be concentrated on Assessment, Recommendations and Solutions

Do will be concentrated onSolution, Implementation and Data Collection

Check-will be concentrated on Monitoring of processes, modify the processes, and check whether it meets the predetermined objectives and validation of the process

Act will be concentrated on Implement actions that are necessary to achieve improvements in the processes

QA team should be able to provide:

- Compliance and accountability
- Site visits and spot Audits
- Survey reports and updates on maintenance activates
- Support for the training for teams and required stake holders
- Brand consistency across all facilities
- Communication and collaboration with customers and stakeholders.
- Planning, conduct, reporting and close-out of for cause/directed audits;
- Hosting of customer audits;
- Preparation of sites for regulatory inspections;
- Coordination and management of regulatory inspections;
- Format, content, compilation, review, approval, update, distribution and archiving of management plan, and assessment of its effectiveness;
- Change control to ensure that changes and the current status of quality systems related components including documents are identified; and
- Roles and responsibilities of quality assurance in handling of scientific misconduct/fraud.
- Review of Reports
- Standardisation of maintenance activities

QA team act as our eyes and ears in the field, working closely with the related teams to create robust quality assurance programs that include inspection reports, visual audits with photos for proof, and service completion verification. The QA team are also dedicated to traveling on site where needed, training providers for specific job sites, auditing provided services, and reporting findings back to you and our operations team. The QA team are even empowered to recall services and have them redone at no additional cost. The quality assurance initiative makes it easy to monitor ongoing projects and keeps business consistent and on track.

To perform and achieve the Quality Assurance Audit objectives, the QA team has to follow all the necessary Standard operation Procedures to inline the Maintenance Management requirements of the Organization.

Each Organization can develop their own procedure to perform the Quality Assurance Audits. The procedure purely depends up own the organizations requirement on their business objectives.

Best practices for Quality Assurance:

- Create a Robust Environment
- Select release criteria carefully

- Apply various methods to save money. It helps to fasten the entire process.
- Allocate Time Appropriately for each process
- Usage of CMMS
- Form dedicated team
- Improve the customer requirements

Quality Assurance Functions:

The below key points can be considered as the primary Quality Assurance Functions:

Technology transfer

This function involves getting an asset design document as well as trial and error data and its evaluation. The documents are distributed, checked and approved. Mainly concentrated on the latest technology which can be available to implement on the assets.

Validation

Here, validation master plan for the entire system is prepared. Approval of test criteria for validating asset and process is set. Resource planning for execution of a validation plan is done.

Documentation

This function controls the distribution and archiving of documents. Any change in a document is made by adopting the proper change control procedure. Approval of all types of documents.

CMMS

CMMS will help to plan and record the QA audits effectively

Assuring Quality of Asset Maintenance

To make sure the Quality of the asset maintenance

Quality improvement plans

Implementing processes for quality management can help quantify the value of the organization and its impact on the bottom line.

Conclusion

Quality Assurance audits establishes and maintains set requirements to make sure the Quality of the Asset maintenance. A Quality Assurance system is meant to increase customer confidence and a company's credibility, while also improving work processes and efficiency, and it enables a company to better compete with others.An organization's QA approach generally emphasizes management, knowledge, skills, personal integrity, confidence, quality relationships and infrastructure. Measurability is the key to QA. Assets are inspected, tested and evaluated to determine whether they meet required performance specifications.On the other hand, Quality assurance is focused on providing confidence that quality requirements are fulfilled to achieve the business objectives. This includes all those planned and systemic actions that are established to ensure that performed and the data are generated, documented (recorded), and reported in compliance with all the necessary requirements and regulations.

Reference

1. Asset Maintenance Management System (http://www.lgam.info/asset-maintenance-management-system).
2. ISO 55001:2014-Asset Management System.
3. Quality Assurance and Quality Control Practices for Rehabilitation of Sewer and Water Mains-National Risk Management Research Laboratory Office of Research and Development U.S. Environmental Protection Agency Cincinnati, Ohio 45268.
4. Why We Need Quality Management in Maintenance (https://reliabilityweb.com/articles/entry/why_we_need_quality_management_in_maintenance/)
5. Maintenance Quality Assurance Program Manual-Kansas Department of Transportation Bureau of Construction and Maintenance 2007.
6. Quality Assurance and Maintenance (https://www.sqa.org.uk/files_ccc/FE6994_SQA_white_paper_maintenance_quality_assurance.pdf)
7. Quality assurance for the maintenance world- NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM, Impacts on Practice—NCHRP Report 422 (http://onlinepubs.trb.org/onlinepubs/nchrp/impacts/NCHRPImpacts_422.pdf)
8. Maintenance Management As a Quality Process (http://www.plant-maintenance.com/articles/maintenance_quality.shtml)
9. Facilities Maintenance QA/QC Plan Sample (https://firsttimequalityplans.com/wp-content/uploads/2013/10/917_Facilities-Maintenance-Comprehensive_Quality-Plan.pdf)
10. Quality Assurance in the Facility Management for Public Real Estate-Maria Rita Pinto & Stefania De Medici,Italy.