

The quality certification and maintenance of industrial installations in the company TREFILEST according to standard ISO 9001/2000

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ABSTRACT

Open borders Algeria to the products and services imposed by the market economy, that the field of competition between firms will no longer be confined to the region or country, but expect the world.

Sell a product to market requires a local Algerian company the same effort

its flow into China and Latin America.

The first major problem encountered in industrial production was the product meets customer needs, therefore, the largest market share undoubtedly revert to that which will best meet customer requirements. But the client now requires guarantees on the amplitude of the supplier to master its production to ensure him a quality product that leads the company TREFILEST to set up a strict quality system. This system allows the company to meet requirements, satisfy the customer and give him confidence; it requires the company to be certified.

In our work, we studied the maintenance and certification of the company according to International Standard ISO 9001: 2000 under a system of quality management. This work is to solve some problems encountered during the manufacturing process to produce better and to satisfy the customer.

KEY WORDS: Quality, standard, procedure, compliance, management, processes,

I. INTRODUCTION

All companies and a set of services organized so that they work in a cooperative process to meet customer satisfaction increasingly demanding, especially that which relates to the quality of the product or service.

To establish or recognize the quality u service or business, it is necessary to have a system of quality management Certification of a company is the goal of any management whose main objective the satisfaction of its customers, reducing production costs and improving profit margins.

The scope of our study concerns the maintenance department of the company production of long products (TREFILEST) has already begun the process of certification for all services since the year 2002 obtained by SGS ISO 9001 /2000.

II.MAINTENANCE

Maintenance and one of the cornerstones on which is built the history of industrial production. It reveals a lot of adaptability to mass production.

III. STATU AND PROSPECTES

Embark resolutely on the path to effective maintenance involves firstly what type of maintenance priority and secondly to assign precisely defined objectives.

Select a type of service over another can take on intuition and is based on a rational analysis, whose prior is a self that will answer the following questions:

- What has been the evolution of maintenance or what has held in the company?
- What is the current situation?
- What are the broad guidelines of the maintenance policy in the future given the objectives assigned to it?

This makes self-diagnosis officials loads maintenance policy which must perform a system scan productive in terms of cost, time quality e. Each piece of equipment constituting the entire system can be multiplied by a coefficient expressing its potential influence on each of these criteria.

IV.THE QUALITY MANAGEMENT

The objective of quality is to satisfy stated and implied needs.

The evolution of quality concepts and their application in the growing industrial and administrative sectors have led him to make quality management a recognized tool of management.

Processing and use of information quality in real-time: test results, identification of product defects or failures of the organization, quality supplies, etc. .. , Provide corrective actions for each finding of fault. So we gradually increased the simple concept of quality control of the product quality assurance for products or services, and finally to quality management, which is part of the body u dedicated to quality in mind the ISO 9000 series

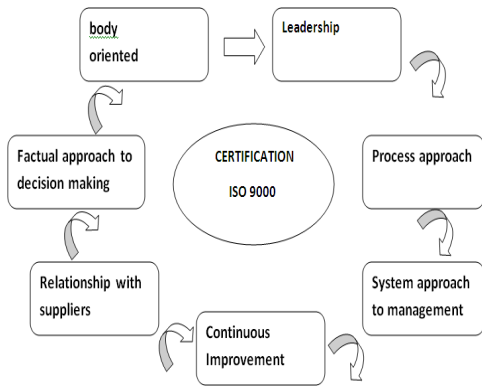
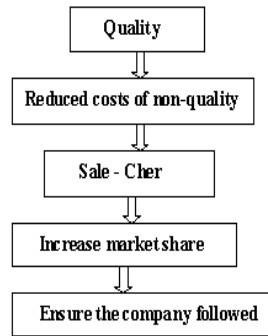


Fig 1. The eight principles of quality management



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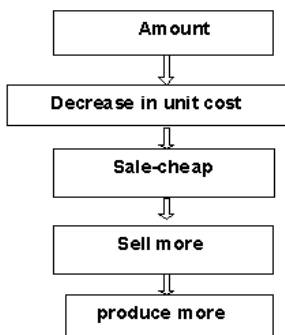
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The quality procedures are traditionally grouped into a typology of five nival:

1. quality control;
2. The control of the quality;
3. The quality assurance;
4. The quality management;
5. Total Quality (TMQ).

Thus, and in the early '40s, companies were managed by a quantitative logic:



By cons in JAPAN, a qualitative logic was introduced by Dr. Deming, commissioned by the U.S. to assist the Japanese in the recovery of their industry completely destroyed by the war:

V. ANALYSIS QUESTIONNAIRES MAINTENANCE FUNCTION BEFORE AND AFTER CERTIFICATION

It will be to ensure that the organization and procedures are consistent with Article 6-3 "infrastructure" of ISO 9001 version 2000.

All charts of the company underwent a change TREFILEST approach to improvement, because they were poorly trained in all services due to poor distribution of the different agents in different positions. As the standard requires new posts and new names of some structures of the company.

IV. ANALYSIS QUESTIONNAIRES MANTENANCE FUNCTION AFTER CERTIFICATION

For maintenance obtain good results for what is effective, it is based on what management. Areas of maintenance management to define no standard rules for well maintained effectively. So we propose a method of analysis decomposes maintenance management globally in twelve areas identified from A to L:

- A-The general organization
- B-The working methods
- C-Technical monitoring facilities
- D-portfolio management work
- E-management of spare parts
- F-purchases parts and materials
- G-organization of the maintenance workshop
- H-Tools and measuring devices
- I-Technical documentation
- J-Staff and training
- K-Outsourcing
- L-control activity

7.THE QUESTIONNAIRE ANALYSIS

We will present some analysis questionnaire maintenance function to some areas for continuous improvement of the quality management system.

It covers twelve sections described above and has 105 questions, each question has 2-5 response options:"yes" or "no"•

- "rather yes" or "rather no", if not totally positive or totally negative
- "yes or no" if one of the options above are not suitable for use, simply check or circle the number in the column closest to the assessment for the issue asked a subtotal is calculated for each of the twelve categories.

This is one example from questionnaires that have been made in the services business TREFILEST,

Questions	No	Rather no	Neither yes nor no	Rather yes	Yes
1- Have you identified and received approval for the organization of the maintenance function?	0				30
2- The responsibilities and tasks defined in the organization they are checked periodically for modifications?	0				10
3- The responsibilities and tasks of foremen and supervisors are clearly defined?	0				20
4- Staff guidance and supervision is sufficient?	0	10		20	30
5- He activity of each supervisor (foreman or section head) it is governed by an operating budget?	0		5		10
6- Is there someone designer to coordinate supplies, works, and stations running?	0			15	20
7- There - there job descriptions (areas of responsibility and initiative areas) for each of the stations running?	0		10		20
8- The man operators' materials they have written instructions to perform the maintenance tasks (monitoring control operation ...) first level?	0	10	5		30
9- You meet with you periodically to review the operation work to be done?	0		5		20
10- The objectives of the service they are written and they are regularly monitored?	0	5		20	30
11- Are you consulted by the operation, or the engineering department at the time of the study or the installation of new equipment?	0	10		20	30
A-250 possible points Subtotal				235	

TABLE I. The questionnaire of A-general organization

From these questionnaires that have been made in the services business TREFILEST, we obtained the following results before certification :

Areas of analysis	scores obtained	Maxi can	Percent
A- General A-Organization	235	250	94%
B- Working Methods	135	250	54%
C- technical monitoring equipment	220	250	88%
D- management work leaves door	300	300	100%
E- Stock Parts	110	200	55%
F- Purchasing and Supply Parts	120	200	60%
G- Organization Workshop equipment	130	200	65%
H- Tools	135	200	67%
I- Technical Documentation	135	200	67,5%
J- Personnel and Training	210	400	52,5%
K- Subcontracting	105	250	42%
L- activity control	300	300	100%
Average and total score	2135	3000	70,41%

TABLE II. Analysis questionnaire maintenance function before certification

From these questionnaires that have been made in the services business TREFILEST, we obtained the following results after certification :

Analysis areas	scores obtained	Maxi possible	Percentage
A- General Organization	135	250	54%
B- Working Methods	135	250	54%
C- technical monitoring equipment	120	250	54%
D- wallet management work	75	300	25%
E- Stock parts	110	200	55%
F- Purchase and supply of spare	105	200	52,5%
G- Organisation workshop material	130	200	50%
H- Tools	25	200	12,5%
I- Technical Documentation	60	200	30%
J- Personnel and Training	150	400	37,5%
K- Subcontracting	120	250	48%
L- activity control	160	300	53,5%
Average and total scores	1325	3000	44

TABLE III. Analysis questionnaire maintenance function after certification

After these results, we obtained this figure of profile maintenance

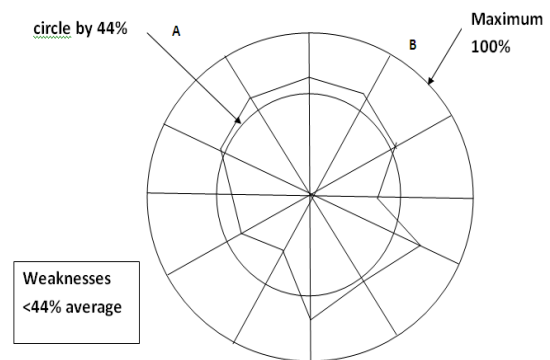


Fig 2. Route profile maintenance

III. RECOMMANDATIONS

In the area of training, we obtained a score of 150 points total 200 points, so it is necessary to develop staff training on the following functions:

- Methods and execution

- } Maintenance Management (managing the costs of maintenance)
- } Inventory Management
- } Exploitation of software maintenance
- In the area of maintenance organization was found after certification a score of 130 points total 200 points, so you have:
 - } Establish a maintenance policy
 - } Creation of a documentary background
 - } Development of routings
 - } Updating historical records
 - } Improved preventive, conditional and systematic
 - } Improved healing work (use of work requests DT launch orders OT work)
 - } Development and installation of integrated computer system (CMMS)
 - } Follow the budget and the cost of maintenance.

Based on the route profile maintenance, there are some weak points (<44%) that can be corrected with corrective action and that after certification that positively affects the maintenance department for the purpose of conducting a product conforming to the short production that is to say, to ensure the availability of the machines the entire period of production to obtain a product in accordance with the customers requirements.

Areas of analysis	Résult %	Actions to be taken
A- General Organization	94%	- Development of job descriptions - Update working procedures - Establishment of a maintenance budget
B- Working Methods	54%	- Study supports maintenance - Development of operating ranges for preventive work - Define a framework for estimating the response time
C- technical monitoring equipment	88%	- Creation of technical records for critical equipment - Update on plan changes - Management and operation of the historic failures and maintenance costs
D- management work leaves door	100%	- Implementation of preventive maintenance policy, systematic and conditional - Implementation of a CMMS - Launch program daily visit failure analysis, prevention plan, operating range ... - Development program for preventive operations - Preparation of a weekly schedule of commencement of work
E- Stock Parts	55%	- Developing recommendation PDR - Monitoring of consumption by PDR equipment - Analysis of supply times for import purchase - Diversify suppliers PDR - Establish procurement procedures

TABLE VI. Summary table

IV. DISCUSSION AND CONCLUSIONS

. For maintenance and achieve good results for it to be effective, it must based on what good management. Starting with this idea, analysis of the maintenance function will be to ensure that the organization and procedures are in compliance with Article "6-3" (infrastructure) ISO 9001 version 2000.

The method of analysis of the maintenance function we studied has three indisputable qualities:

- It is objective:

It does not extreme judgments as "good" or "bad" it leads to identify weak points and strong points, achieve perfection, ithe twelve points on the circle profile maintenance is unthinkable, it is turned to action since identifies the domain in which progress is possible.

- It allows dialogue:

The questionnaire is completed by the staff of the showdown response brings up differences that are extremely interesting to analyze, it can struggle to find a common answer and reflect on the useful points made in the smooth running of the service.

- It is reproducible

Repeat this maintenance is perfectly feasible and recommended.

V. REFERENCES

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