SNS COLLEGE OF TECHNOLOGY

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COIMBATORE-641 035, TAMIL NADU

TOTAL QUALITY MANAGEMENT

INTRODUCTION:

Today, there is no single universal definition of quality. Some people view quality as "performance to standards" others view it as "meeting the customer's needs" or "satisfying the customer".

Food quality is a complex concept that can be assessed only in relation to food safety.To be considered safe for consumption, a food must meet: legislative requirements; technological criteria, hygiene requirements, transport and handling requirements, trading conditions and satisfy its intended use. In order to preserve the quality features in food products, various safety and quality assurance systems have been developed. Any system constitutes a systematic approach to assure that food products have particular traits at any stage of production and distribution. Total Quality Management (TQM) is a theory of management based on the principles of quality assurance. It consists of the integration of all functions and processes within an organization inorder to achieve continuous improvement of the quality of goods and services. A quality management system (QMS) system can be defined as a set of coordinated activities to direct and control an organization in order to continually improve the effectiveness and efficiency of its performance.

THE PRINCIPLES OF TQM

TQM's primary objective is to achieve customer satisfaction by involving each and every individual directly or indirectly dealing with product manufacturing. TQM operates on the basis of the following principles:

1. Involve everyone associated with the organization, including personnel, customers and suppliers. Management must be involved by providing leadership role.

2. Processes are the problem.

3. Every employee is responsible for quality.

4. Everyone is a customer and a supplier.

5. Prevent problems. Do not wait for them to occur and then fix.

6. Involve the processes of preparing and delivering products and services to customers.

7. Quality improvements must be continuous.

8. Quality can and must be managed.

9. Plan and organize for quality improvement.

10. The quality standard is defect free.

11. Goals are based on requirements, not negotiated.12. Life cycle costs, not front end costs.

The 10 Steps to TQM

Maintenance of these principles is based on 10 steps which are recognized as fundamental to a TQM program.

1. Pursue new strategic thinking

2. Know customers

3. Set true customer requirements

4. Concentrate on prevention, not correction

5. Reduce chronic waste

6. Pursue a continuous improvement strategy

7. Use structured methodology for process improvement

8. Reduce variation

9. Use a balanced approach

10. Apply to all functions

Tools & Techniques Used In Quality Management:

Food Security Programs-

Safety food programs can be set as the measures to be taken to ensure that food can be eaten without adversely affecting the consumer's health. These measures aim to prevent food contamination, such contamination are chemical, physical or microbiological. The programs commonly used in this area are Good Manufacturing Practices (GMP), Hazard Analysis and Critical Control Points (HACCP) etc. Some are obligatory by law, and others are implemented voluntarily by the food chain members. The distinction between obligatory and voluntary systems is based on the safety (hazard-free products) being the quality of food required by law. Thus, obligatory systems have been established to assure food safety and aresubsequently called "safety assurance systems".

Good Manufacturing Practices (GMP)-

Good Manufacturing Practices (GMP) is a set of guidelines specifying activities to be undertaken and conditions to be fulfilled in food manufacturing processes in order to assure that the food produced meets the standards of food safety. The Good Manufacturing Practices program is composed of a set of principles and rules to be adopted by the food industry in order to ensure the sanitary quality of their products. The basic aim of GMP is concerned with the precautions needed to ensure adherence to all quality and safety basic requirements like:- Elimination, prevention, minimisation of all product failures in the broadest sense;- Consistently yields safe, ensuring certain quality uniformity.

The rules establishing the GMP involves requirements for industry's installations, through strict rules of personal hygiene and cleanliness of the workplace to the description in writing form of all procedures involved in the product. The projects and industry facilities, in addition to requirements engineering/architecture, must meet requirements to ensure food safety, such as the installation of devices to prevent the entry of pests, contaminated water, dirt in the air and designed to avoid the accumulation of dirt or physical contamination of food that is being manufactured. On the production line, the procedures and steps for handling the product have to be documented, in order to ensure the standardization of safety practices. Also records should be

implemented as evidence that the job was done. Regarding food handlers, the GMP recommend that training should be given and recycled so the concepts of hygiene and proper handling are assimilated as a working base. A control of raw materials should be developed with suppliers, not only in the laboratory, but ina gradual and continuous improvement work, where food security is split with suppliers. Guidelines for the safe packaging of raw materials, inputs and finished products should be followed and extended to the storage and loading area, and to the transportation that reaches the consumer.

Good Hygienic Practices (GHP)

- It is a set of guidelines specifying activities to be under taken and hygienic conditions to be fulfilled and monitored at all steps of the food chain in order to assure food safety.

Hazard Analysis and Critical Control Points (HACCP)

- HACCP is a preventative, proactive and systematic approach of food safety, which relies on the identification and control of the all the known associated health hazards in the food chain. The system based on seven principles was developed to control the biological, chemical, and physical hazards from the raw material production, through manufacturing, distribution and consumption of the finished product. HACCP is widely acknowledged as the best method of assuring product safety and is becoming internationally recognized as a tool for controlling food-borne safety hazards.

7 principles of HACCP:

Principle 1: Conduct a hazard analysis;

Principle 2: Determine the critical control points (CCPs);

Principle 3: Establish critical limits;

Principle 4: Establish monitoring procedures;

Principle 5: Establish corrective actions;

Principle 6: Establish verification procedures;

Principle 7: Establish record-keeping and documentation procedures.

Each step of the production process of a product will be analyzed for the possibility of a chemical, physical and microbiological contamination. Thereafter preventive measures are described and identified the Critical Control Points (CCPs). For each critical point is necessary to establish critical control limits, which allow the monitoring of hazards. As there is always a possibility of failure, it is essential to provide corrective measures in order to ensure the process return into a controlled situation. It should also establish procedures for verification of CCP´s

and their respective records. After the HACCP plan drawn up, it is validation occur through discussions among team members. Finally, the HACCP plan is disseminated to the production employees and for those responsible for assessing the products quality on the factory floor. Internal and external audits are must be done for periodic maintenance and continuous improvement of the system.

Standardization

Standardization is a management tool involved in the preparation, training and control standards within the company. The main objective of a program of standardization for the food industry is to minimize the variations in quality of production. For this, it is necessary to provide means to standardize both the operational and analytical procedures, as raw materials, machinery and equipment used in the manufacturing process. Such standards are documents containing technical specifications or specific criteria that will be used as a guide in order to ensure that products, processes and services are designed with quality.

PDCA cycle

The PDCA cycle is a method of managerial decision-making to ensure the achievement of goals related to a process, product or service. The letters that form the acronym PDCA mean Plan, Do,Check, Action.

Plan (P) consists in establishing goals, and procedures to achieve them.

Do (D) consists in performing the tasks as planned and collect data that will be used in the stepcontrol. Thus, in the stage of "implementation" are essential trainings at work.

Check (C)consists of comparing the results achieved with the planned goals through qualitycontrol tools.

Action (A) is to act correctively in the process in order to correct an unexpected result