

6S METHODOLOGY AND ITS APPLICATIONS

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Abstract—In the now days, the management in the companies requires not only quality management system standards, but also require the continuous improvement in the quality management with zero accidents. The continuous improvement is required with the full safety. This process of continuous improvement in the quality management is known as the Total Quality Management. The implementation of total quality management at operating level uses the idea of 6S. 6S is a philosophy of thinking and focusing on organizing and managing the workplace by eliminating wastage and improving the quality and safety. The safety of employees at the workplace is important in current days in the organizations. Every organization wants to provide a safer work environment to their employees in these days. The 6S method is used to create a highly effective and safer work environment in the organization. The main concept of 6S methodology to organize all processes in an effective manner and improves the quality management system in the workplace. 6S methodology is commonly implemented with the Kaizen, lean Manufacturing and Just in time manufacturing techniques. It is a tool for helping the analysis of processes and reduction in time of processes running on the workplace. The 6S method is used to improve the quality, reduction in cost, reduction in wastage and improvement in safety. The 6S is the method of creating and maintaining well-organized, safe, neat and clean environment in the workplace.

Keywords—Total Quality Management, Improvement in quality, 6S methodology, Cost reduction, Safety

1. INTRODUCTION

6S is the commonly used method in the organizations. It is used to improve the quality, reduction in cost, reduction in wastage and improve the safety in the organization. 6S methodology is commonly implemented with the Kaizen, lean Manufacturing and Just in time manufacturing. The 6S method begins each method with the improvement. It is a tool for helping the analysis of processes and reduction in time of processes running on the workplace. The 6S is the method of creating and maintaining well-organized, neat and clean environment in the workplace. The 6S method steps are:

- Sorting
- Set in order
- Shine
- Standardization
- Sustain
- Safety

6S is an addition of one new feature safety in the 5S methodology. 6S is a method for creating and maintaining an organized, clean and high performance and safer workplace. It is used to provide a safer work environment in any organization. It helps in achieving high quality, reducing costs and better customer satisfaction. 6S is a management system to minimize waste and to enhance productivity of any organization. Safety must be a primary consideration when implementing 6S methodology.

Sorting

It is the first step of 6S methodology. In this step, sort the all usable material at the workplace and throw away the unusable material from the workplace. Sorting of material is helpful to free the floor area.

Set in Order

This is the second step of 6S methodology. In this step, arrange the all material, tools and machines in a planned and best order at the workplace to use them properly. This

arrangement of machines, tools and material saves time and reduce the wastage of resources. The proper material handling reduces the wastage of material. The all things are placed at their suitable place in this step.

Shine

This is the third step of 6S methodology. Clean the all machines and tools properly at the workplace. The floor area should be neat and clean. The machines and tools should be dust free and oil free. So, the machines and tools should be clean properly and regularly.

Standardization

This is the fourth step of 6S methodology. Use the standards at the workplace to increase the efficiency and moral of employees in the organization. Standardization of workplace is most important for better working.

Sustain

This is the fifth step of 6S methodology. In this step, the all above four steps should be regularly implemented at the workplace. The manager should take care of regular implementation of all steps. Regular use of above four steps at the workplace is increasing the efficiency of workers and machines.

Safety

This is the final and most important step of 6S methodology. Safety is most important for creating a good work environment. The all safety instruments are installed at the workplace. The all employees should wear all safety equipment before enter in the workplace. This is helpful in creating a safe and better work environment at the workplace.

TABLE 1: MEANING OF 6S METHODOLOGY

6S Word	Meaning
SORT	Throw away all useless and waste material from the workplace
SET IN ORDER	Everything in their proper place for quick access
SHINE/CLEANLINESS	Maintain the workplace neat and clean
STANDARDISATION	Constantly keep order at workplace and make it habitual
SUSTAIN	Practice 5S daily
SAFETY	Use all safety equipment and maintain them in a well manner

6S methodology is very helpful for organizations in modern days. The table 1 explains the meaning of 6S technology. 6S is technology is easy to implement and understand for everyone.

Aims of 6S:

- Improve quality
- Reduce costs
- Neat and Clean workplace
- Minimize accidents
- Maximize production rate
- Improve safety
- Reduce Inventory
- Eliminate wastage

2. LITERATURE REVIEW

During Second World War, the production capabilities of Europe and Asia were destroyed. At that time, United States (U.S) expands their production capabilities because their focus was on quantity not on quality. But they produce best quality in the world at that time compare to other countries. In late 1940, a U.S quality control expert Dr. W Edwards Deming starts working with Japanese for several years. In early 1960, the Japanese developed the concept of quality circle and 20 years later it was used by more than a million organizations. At the same time other Japanese quality expert; Dr. Genichi Taguchi introduced a new statistical concept. It was helpful in improving process and quality of product. After this improvement the Japanese introduced many quality techniques all over world.

One of best quality technique developed by Japanese is 5S. It was developed by Hiroyuki Hirano. It was first used by Toyota in 1970. The 5S methodology is the foundation for

the modern “Just in Time” inventory. The actual goal of 5S is to present an impression of ownership of the process to each of the employee. The 5S was developed in Japan. It was identified as one of the best techniques that enabled Just in time manufacturing. In the present, there is most common issue is safety at any organization because the chances of many major accidents may happen without proper safety. To reduce these chances of major accidents many experts give their thought to use safety as an additional feature with the 5S technology. This use of safety with 5S technology is known as 6S technology. In modern days, many companies use 6S (5S + Safety) technology that is one additional feature safety with the 5S technology. The 6S is the new or updates version of 5S technology. This technology becomes more popular worldwide in present. The many organizations adopted the 6S technology in these days.

3. ADVANTAGES OF 6S METHOD

- Reduction in material handling.
- Neat and Clean workplace.
- Easy to search and use any tool.
- Easy to access all equipment’s and files.
- Saves time.
- Increase productivity.
- Increase quality.
- Reduce workers injury.
- Make safe work environment.
- Improve communication between employees.
- Reduce costs.
- Increase workplace safety.
- Increase efficiency of plant.
- Increase work speed.
- Maximize use of tools.
- Reduces wastage.
- Reduce equipment and tools breakdowns.
- Reduce tool changing time.
- Increase output.

4. APPLICATIONS OF 6S METHOD

- It is used to improve the quality of products.
- It is used to reduce manufacturing cost of products.
- It increases the efficiency of plant and workers.
- It is helpful in making a neat and clean work environment.
- It helps to reduce material handling time in the plant.
- It helps to achieve maximum and better use of resources.
- It reduces the wastage in the plant.
- It increases the workers safety in the plant.
- It helps to create a safe work environment in the plant.

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