

Implementation of 5S in a Small Scale Industry

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Abstract— *Improper allocation of resources, improper time management and lack of knowledge among the workers has a great impact on the quantity and quality of products manufactured in any industry. This project highlights, the issues effecting the efficiency and productivity in the production unit of a growing LED manufacturing industry M/s. Specialty Value Lighting & Design Private Limited, Vasai, Maharashtra, and also solution to the problems achieved through introduction of 5S. Procedures involved in implementation of 5S and the transformation on successful implementation of 5S are discussed in detail.*

Keywords— *5S, efficiency, implementation, manufacturing, productivity.*

I. INTRODUCTION

The simple and very effective tool which greatly helps in enhancing the work efficiency. It has universal application which means it can be implemented in offices, factories, hospitals, hospitality industry, banks, etc. Implementation of 5S doesn't require any kind of technical or statistical knowledge. 5S is a technique that results in a well organized workplace complete with visual controls and order. Basically, an environment that has a place for everything and everything in its place, when we need it. 5S gives us a workplace which is clean, uncluttered, safe and organized. 5S stands for Sort: separating necessary from unnecessary, Set in order: organize work area, Shine: keep workplace clean, Standardize: continually monitor levels of organizing, Sustain: self discipline.

II. PROBLEM DEFINITION

After visiting Speciality Value Lighting & Design Pvt Ltd and every production unit was studied. Their current layout and working procedures were noted.

- Useful place occupied by unwanted materials.
- Time required for searching the tools is more.
- Improper schedule for cleaning.
- Instructions are not followed properly.
- Unequal participation of workers.

III. OBJECTIVES

- To study and identify problems at work area.
- To reduce the waste and increase the productivity.
- To improve effectiveness and efficiency in work area.
- To measure the improvement after implementing 5S practices.

IV. METHODOLOGY

5S is a strategy for attaining workplace organization and cleanliness, and it will improve quality, productivity and moral than any other lean manufacturing improvement.

The first 'S' stands for Seiri (Sort): It is a waste removal step; all materials are sorted as necessary and unnecessary. To sort out necessary and unnecessary materials red tag is used. Its helps to maintain the clean workplace and saves time for searching and receiving things, shortens the time of running the operation. In sorting we distinguished the useful and scrap items. Then scrap items were removed from the storage unit.



Fig.1 red tagging of material which are not required

The second 'S' stands for Seiton (Set in order): The materials that were separated in earlier stage is stored orderly and labelled, so as to it will easily found whenever required. It will reduce the time required for searching the materials.



Fig.2 before implementing second 's' Fig.3 after implementing second 's'

The third 'S' stands for Seiso (shine): It is related to the cleaning, shine and sweeping of work place. During cleaning, it is checked workplace area, preventive maintenance of the and equipment etc. we implemented this method as we were proceeding with the sorting method. As we were proceeding the sorting we were differentiating used & not used items and then we cleaned the whole work place, then after this we reached every racks & then cleaned every rack for cleaning method. For cleaning we removed all the items from their boxes and then we filled it in the racks because the materials which are very sensitive like reflectors may get damaged while taking out when required.



Fig.4 before implementing third 's' Fig.5: after implementing third 's'

The fourth 'S' stands for Seiketsu (Standardize): In this step standard procedure, audit sheet and work instructions are prepared to maintain Sieso. Before starting of work to check and correct the sorted items, placing equipment's at its place and cleaning etc. and give proper reading on audit sheet and create awareness in employee to maintain this thing on production line. We have translated the standard of procedures in Hindi so that the workers can easily understand.



Fig.6 standard of procedure for handling lead wire

The fifth 'S' stands for Shitsuke (sustain): Sustain is about the mental and physical disciplines required to maintain the other Seiketsu items. It is done with help of cooperation between employees, store keeper, engineer and manager.

V. CONCLUSION

The 5S is an effectiveness to manage tools and materials which can improve housekeeping, environmental conditions and health and safety standards and increase productivity and quality. 5S sort stage eliminates unused, unwanted material from the storage room which reduces clutter. Set in order allocates space for components, due to this it gives more space for storing more material and tools and result in reduction in searching time. 5S reduce the searching time and improve the production a quality of the products and employees and organization become self-disciplined.

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