

ABSTRACT

PT XYZ is one of the industrial and manufacturing companies in West Java province where in its implementation, there are products that are processed by the company by only merging parts obtained from other companies, and there are products that are produced directly from start to finish at the company. One of the products from PT XYZ that is produced directly is the 3 kg Liquefied Petroleum Gas (LPG) cylinder. In the production of 3 kg LPG gas cylinder, it is known that there is still a production output unattainable with the predetermined target.

In order to determine the cause of the inadequacy, a study was conducted using a lean manufacturing approach in order to detect non-value added activities in order to minimize activities or waste in the tube production process. Then, identify the root causes of the problem using the fishbone diagram and Pareto diagram tools. Based on the root cause of the identified problem, further identification is carried out with the 5W1H to be able to provide recommendations for appropriate improvement proposals.

By observing the activities of the production process using VSM and PAM tools, it is known that the lead time in the finishing work area is 1120.34 seconds / product with a VA activity time of 162.47 seconds, NVA of 857.57 seconds, and NNVA of 100.30. seconds, and it is also known that there is waste waiting which takes 856.36 seconds. The recommendations for improvement proposals are given, namely by recalculating the number of machines needed for the hydrostatic test process, as well as proposing the design of a tool for combining machines which in some processes use the same type of machine, as well as providing suggestions for training operators and improving methods. work in the production process, especially the pressing and welding work area in order to minimize any differences in the quality of the tubes produced, so as to minimize the detection of reject or defect products in the finishing work area. The results obtained from all the proposed improvements were that there was a change in the lead time which could be seen from the VSM future state, which was 1,038.65 seconds / product which initially took 1,120.34 seconds / product. In VA activity, there was a change to 165.42 seconds, and for NVA and NNVA activities, there was a time reduction of 84.64 to 873.23 seconds.

In the simulation using FlexSim, it is known that the lead time for the improvement, the resulting product output has not been able to reach the expected target, which is only 45% of the target output. This makes the research has to be done again to minimize waiting or other waste, so that the production process can be more effective and efficient.

Keywords: *lean manufacturing, waste waiting, VSM, PAM, cycle time*