To Reduce Downtime in the Sugar Plant By Applying Six Sigma Techniques.

(HAQ BAHU SUGAR MILL)

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Executive Summary

The report narrates a serious effort to reduce the downtimeby 50% and COQ by reducing the impact of defect occurrencesthrough improvement in the system and by spreading a six sigma culture in the organization; resulting in an annual estimated net cost saving of Rs.10.6 M.

The statistics showed thataveragely 19.3 Million was being spent each year in the form of cost of poor quality i.e., negligence in various areas where even sometimes hazardous situation was faced. Many a time problems arose, for which the plant was shut down for the time period ranging from minutes to hours. As the sugar plant is a 24 hour running plant and a stoppage for one minute costs very high(Rs.8125/min), so the problem was seriously taken into account by the higher management and to deal with; a manager level person was selected and got trained on six sigma black belt.

The data about the defects occurred in the last 5 years was collected with all the relevant details. Through these details, the analysis was performed and the root causes were identified. The details also became the base of the strategy for controlling the defects/problems.

The five pillars of six sigma approach are brought into practice i.e., DMAIC for achieving the said goal. The approach proved to be very beneficial and the defect/problem occurrence was controlled and reduced by30% as compared to the case before.

In the Define Phase, the
project charter
was defined with a properly justified business case. The main objective was set for the said activity and summary level plans were addressed in it. Generation of
SIPOC Diagram
and flow chart
also supplemented the section in the last.

In the Measure Phase, the main outcome and factors influencing were defined and the relevant impact was studied with the help of six sigma tools like C&E Diagram, Pareto Diagram and Box plots etc. An exercise for measuring system analysis (MSA) was also performed to assess the linearity and bias of the measuring instrument.

In the Analyze phase, the critical factors influencing the main outcome were analyzed deeply and their further causes were identified. These critical factors were set as the targets for Improve Phase. Regression analysis of variables was conducted in parallel with process capability analysis.