

Comparison of Critical Path and Linear Scheduling Method Applied To Bridge Engineering

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Scheduling forms the core in the successful management of any construction project. Though the fact remains that a schedule is a dynamic entity rather than a static one, an efficient schedule is the one which considers all the possibilities of changes and modifications, ahead of the time, and is flexible enough to modify itself, to minimize the effect of being dynamic. It is therefore required to identify a scheduling method for bridge construction projects in general, which will satisfy the monitoring and controlling aspect and allied requirements while optimizing the duration and cost of the project. As a part, this research will assess the suitability of LSM in comparison with the CPM. As a whole, this research will prompt the US construction industry to make use of LSM, if observed so, as an efficient scheduling technique.

The methodology followed in this research is classified briefly in four steps as follows:

Study the obtained data in detail, prepare the CPM schedule and thereby chalk out the parameters and factors of comparison, Generate the LSM schedule by using and maintaining the same input data as that of the CPM schedule, Perform the stochastic simulation of the schedules and Compile a comparative analysis, leading towards the conclusion.

By investigating the observations and conclusions of the comparative study of LSM and CPM based on the stochastic construction simulation, the researcher will identify along with its pros and cons, the most effective method for the bridge construction scheduling, and thereby assess the feasibility of the LSM for the bridge construction scheduling.

The linear scheduling method is a new method of scheduling compared to the CPM. Unlike the software industry, which is volatile, and whose frequency of changes and adaptation of new technologies is more with an open mind, construction industry has always been relying on the conventional methods and techniques. This research will aim to make an overhaul of the mindset of the US construction industry, and will try and infuse awareness about new technologies and their effectiveness. The findings of this research will be certified in the real sense only when they will be supported by a solid statistical base formed by the extensive 'on project' usage of the LSM. Although this research will deal with the bridge construction, it may be expected in future that the findings of this research will stimulate the further research on the application of Linear Scheduling Method to various construction projects including multistoried buildings, mass housing projects, and offshore structures.