

FORECASTING AND ANALYSIS OF RISK FACTORES IN CONSTRUCTION MANAGEMENT

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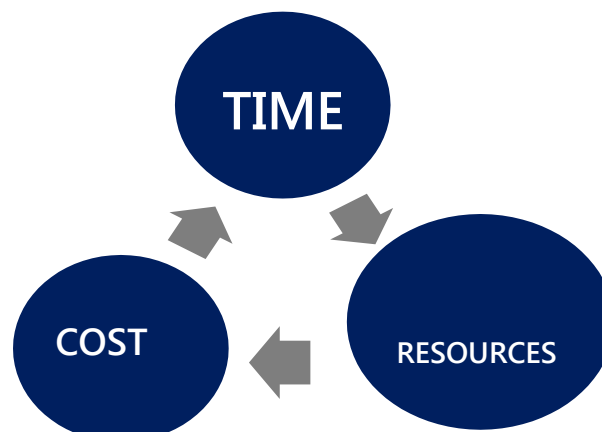
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ABSTRACT

Construction management is a professional service that uses specialized ,project management techniques to oversee the planning, design, and execution and construction of a project, from its beginning to its end. the purpose of construction management is to control a projects time, cost and quality. In several construction project experiencing more delays which results in exceeding the initially fixed delivery time and cost. further the questionnaire survey is conducted with the participants (contractors, owners, consultants and others) of construction industry in order to short list the top 20 major factors affecting the construction process. The study aims at identifying the risk factors affecting construction project management. we visited a on going construction site (Nagai power pvt Ltd) , from that company and we gathered more details about construction management techniques , we studied about real execution and construction management charts we understood the problems raised in real execution and scheduled chart . That all points are noted and we have represented in this project report as per our book reference studies the following risk factors are affecting the construction management. It is hoped that these finding will guide effort to enhance the cost of construction industry.

I INTRODUCTION

A construction management plays an important role in construction project and to ensure that project smoothly from start to finishes. And also it through planning, design, construction and post construction phases for the purpose of achieving projects. Construction management is compatible with all project delivery systems, including design, construction management risk and public private partnerships.



II FUNCTIONS

Subsequently the functions of project management for construction generally includes the following :

- Specification of project objectives and plans including delineation of scope, budgeting, scheduling setting performance requirements, and selecting project participants.
- Maximization of efficient resource utilization through procurement of labor, materials and equipment according to the prescribed schedule and plan.
- Implementation of various operations through proper coordination and control of planning, design, estimating , contracting and construction in the entire process.
- Development of effective communications and mechanisms for resolving conflicts among the various participants.

RISK MANAGEMENT

It means of dealing with uncertainty- identifying sources of uncertainty and risks associated with them, and then managing those risks such that negative outcomes are minimized(or avoided together), and any positive outcomes are capitalized upon.

III FACTORS AFFECTING CONSTRUCTION MANAGEMENT :

- **BEFORE CONSTRUCTION STARTED**

Statutory clearance and approval formalities

Bank loans

Land acquisitions

- **AFTER CONSTRUCTION STARTED :**

TECHNICAL FACTORES

NON TECHNICAL FACTORES

TECHNICAL FACTORES :

Leadership and organizational failures

Quality and specification failures

Scope changes and design changes

Time overrun

Cost overrun

Technology changes

Communication failures

Insufficient resource failure

- **NON TECHNICAL FAILURE :**

Contract failure

Funding failure
Shortage of materials
Political regulatory and social risks
Safety and health risk
Funding failure risk
Labors strike
Public protest
Financial and economic risk
Unavailability of workers
Environmental factors

- Unpredictable climatic and weather conditions
- Earthquake
- Flood
- Unknown geological conditions

Above these are the risk factors that affecting the construction process to delay the progress.

EFFECTS OF DELAY :

- Time overrun
- Much reduction in profit for the contractor due to cost overrun.
- Abandon of project
- Dispute, arbitration or litigation between the participants of the project.
- Difficult in improving the market value of the contractors company.
- Non-productivity loss for the owner due to extended stay of construction phase.
- Distrust insists the owner to delay the progress payment which leads to contractor's cash flow problem

THERE ARE FOUR BASIC WAYS TO HANDLE A RISK .

- **AVOID :** The best thing you can do with a risk is avoid it. If you can prevent it from happening, it definitely won't hurt you project. The easiest way to avoid this risk is that may not be an option on this project.
- **MITIGATE :** If you can't avoid the risk, you can mitigate it. This means taking some sort of action that will cause it to do as little damage to your project as possible.
- **TRANSFER :** One effective way to deal with a risk is to pay someone else to accept it for you. The most common way to do this is to buy insurance.

- **ACCEPT** : When you can't avoid, mitigate, or transfer a risk, then you have to accept it. But even when you accept a risk, at least you've looked at the alternatives

TO AVOID TIME OVERRUN AND LOSSES IN PROFIT ARE AS FOLLOW :

- Recommendation to client
- Recommendations to consultant
- Recommendations to contractor

RECOMMENDATION TO CONSULTANT :

- Improve the existing process of monitoring and controlling in order to have close inspections at appropriate stages, to detect potential problems in time and .
- Expedite the approval process strictly adhering to the existing procedure
- Estimates should be reviewed by a team of consultants , comprising Engineers, Architects and quality surveyor before tendering.
- Take more care in preparing sum items in the estimate should be minimized.

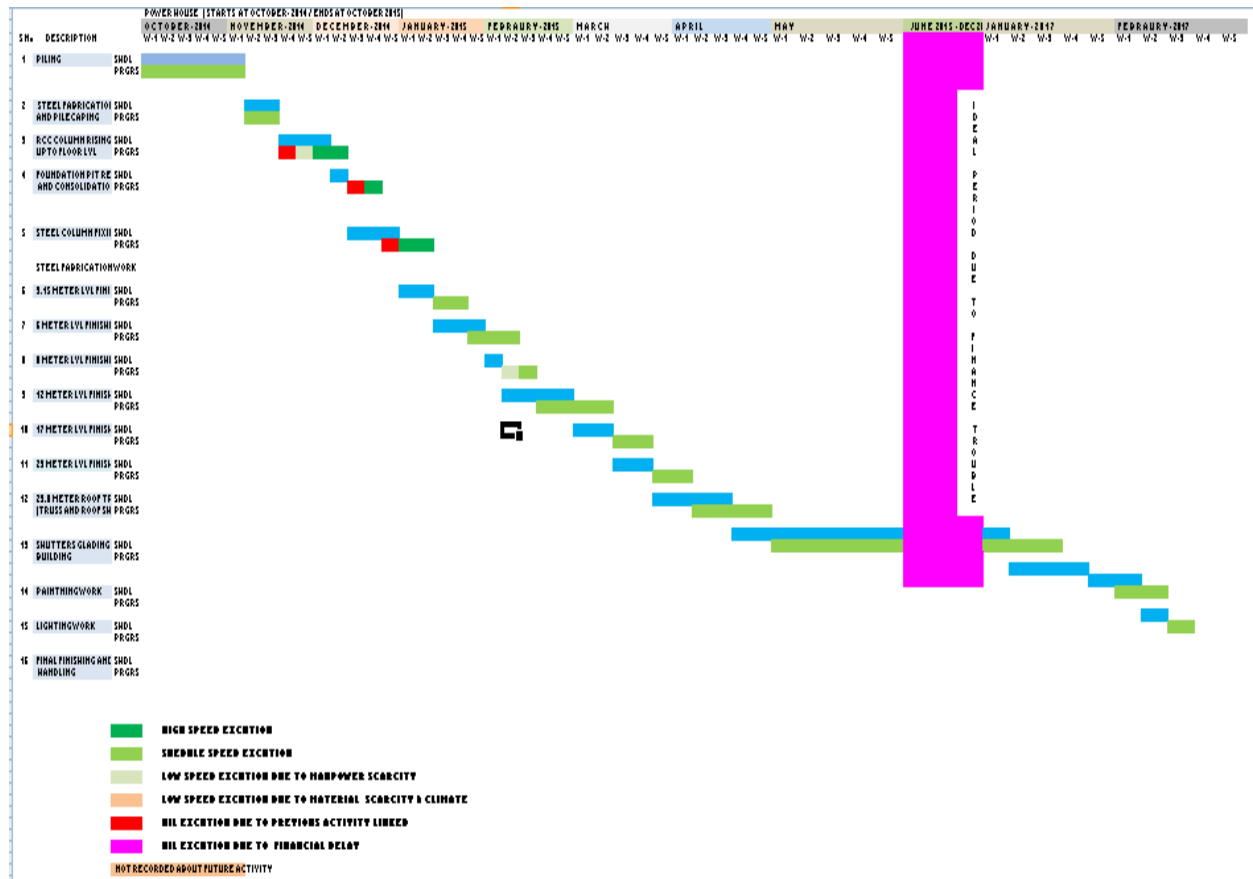
RECOMMENDATION TO CONTRCTOR

- Be conversant with contractual matter a and contractual rights stipulated in the conditions of contract.
- Be wary of the behavior of the market and maintaining buffer stocks of material in keeping with scheduling of project procurement plan.
- Need to manage financial resources efficiently including the efficient cash flow management using the progress payments.
- Project should be properly planned and scheduled considering the availability of resources , weather patterns and realistic time allocation for tasks.
- Every attempt must be made to retain the same labor gang throughout project duration..

RECOMMENDATION TO CLIENT :

- Needs to ensure that sufficient funds are available for uninterrupted payments before awaring the contract .
- Needs to take adequate care in preparing a sound "project brief" by involving a wide range of stakeholders to identify their requirements.
- Needs to make sufficient time available for consultants to do proper design.

WORK SCHEDULED CHART OF NAGAI POWER PLANT SITE



COMPANY DETAILS :

We search more company and then we selected (Nagai power pvt ltd) which is located near nagaipattinam, ookour village. This company is coal based power (150 MG) plant construction. This project has been started at 2013.Total project time is 4 years as per the construction management scheduled .. but financial problem was raised in 2016.So total project work has been stopped for 15 months. Due to financial criteria .Again the project construction work is restarted in 2017.The total construction cost is 750 crores including all machineries .The company has been spent 200 crores for finance contribution. The remaining amount of 550 crores from bank loan .Insufficiency statutory paper, they did not get loan at proper time. So work has been stopped for 15 months.so the project time prolong to 15 months.

COMPANY LOSS DETAILS :

- Total production of current for 1 hr = 150 Mega watt.
- 1 mega watt = 1000 units.
- The selling price of 1 unit current = 10.50 rupees.
- Per hour gross income is 10.50 x 1.5 lakhs = 1575000 rupees

- Assume 20 % profit in gross value(per hour)
= 315000 rupees

- The total loss value = 3402000000 rupees. CONCLUSION :

The study identified 20 factors responsible for the construction delay. The all significant factor that affects the construction process it leads to time over run. Due to time overrun it causes loss in profit .This can affects the three main parties to the contract namely clients, consultant and contractors . The benefit of risk management in project is huge because the outcome of project failure wasted money that steal investor profits and have a negative impact on the organization's. This results allow you to deliver project on time, on budget and with quality .Complete your risk assessment early on in the project's execution and continuously throughout the project lifecycle. It will increase your project's success likelihood .

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