

The Impact of Employee Absenteeism in Fast-Tracks Projects

*Josué Vázquez Carrasquillo
Engineering Management Program
Dr. Hector J. Cruzado
Graduate School
Polytechnic University of Puerto Rico*

Abstract – *Fast-tracking is a project management technique where activities are performed simultaneously, instead of waiting for each task to be completed separately. When personnel do not show for work, it creates a negative impact. The purpose of this project was to measure this impact. For two months, a residential and commercial construction solar industry company made a study and measure the impact of employee absenteeism. The impact on the budget was negative economically. Once the company understood the impact and measure it, they established techniques and decreased the absence from 15-25% to 7-12.5%.*

Key Terms - *Accurate Assistance Record, Data Collection and Comparison, Fast-track Project, Incentives*

INTRODUCTION

The management of construction projects depends on a few factors such as resources, materials, employees, and budgets, among others. All projects have due dates depending on the type of the constructions. Fast Track Projects refers to a technique where activities are performed in parallel, instead of being carried out sequentially using the original schedule. Simply put, fast-tracking a project means different tasks are worked on simultaneously, instead of waiting for each task to be completed separately. To accomplish the fast-track projects, having all planned personnel is imperative.

The company for this study is a residential and commercial solar construction with more than 15 years of experience. They have been experimenting problems with employee absenteeism for over 5 years. The company wants to understand the situation and how is affecting all areas. First, the company needs to establish mechanism to monitor

absences and to compare it during a predetermine period.

The solar industry uses the fast-track managing for all construction projects, the advantage of this technique is the fast construction. It helps to reduce costs and keep planning the next project. Usually, residential solar construction projects can last 3 to 4 days, sometimes less. The budget is considered by coordinating materials and manpower. Materials are bought considering the expectancy of workload for the next 6 months. This way, the company can reduce the material cost by volume. The manpower is considered also by workload. A construction crew usually has 4 persons and is expected to work from 8 to 10 days, even more, to complete the projects.

If material is missing or personnel is absent, the cost of the project will increase. This is the situation of the company the personnel absence is creating a negative impact on the projects. The company must resolve this problem but do not have accuracy resources to do so. The objective of this paper is to measure accurately the impact of absences.

LITERATURE REVIEW

The solar industry has the biggest growth since 2000. The annual growth rate is 42% and the new policies and tax credits are helping the increase shown in Figure 1. These new policies have helped the creation of more than 97 Gigawatts of clean energy nationwide, which will be enough to supply power to 18 million houses.

The fast development of the construction industry like solar, buildings, pharmaceuticals, among others, has created the necessity of fast construction technique. Fast-track management covers this need. This technique helps shortening the project duration by working several task or

subproject simultaneously. The shortening usually increases the complexity of the project creating real challenges for the project's team [2]. The main challenges occur in the interconnection between the project's phases and the reactions to the changes during the project period [3]. One definitional issue that has arisen is whether fast track construction requires the use of a construction manager (CM) and the elimination of the general contractor. The construction manager will do the interconnection between all subcontractors [3].

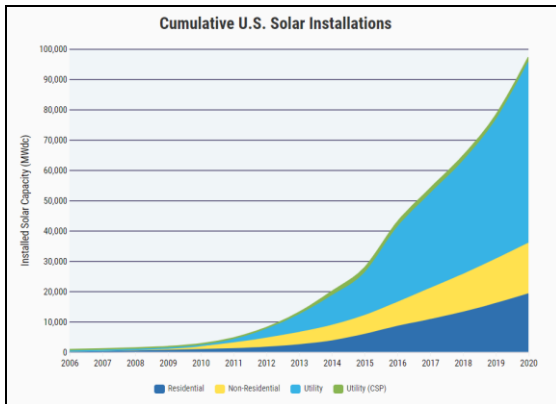


Figure 1
Cumulative US Solar Installation [1]

This fast development and construction techniques also comes with high risk. The interconnection of all disciplines can be very challenging, especially in case of any issues resulting in delays [4]. Fast tracking can be a wonderful way of shortening a project's schedule and achieving early completion—that is, if everything works out as planned. It can, however, easily cause rework to be required, and in the worst-case scenario the final timelines will be longer than they initially would have been without applying the fast-tracking approach. The risks are increased but also the benefits if the coordination is successful. Figure 2 shows how Fast-Tracked Management compares to other types of managing [4].

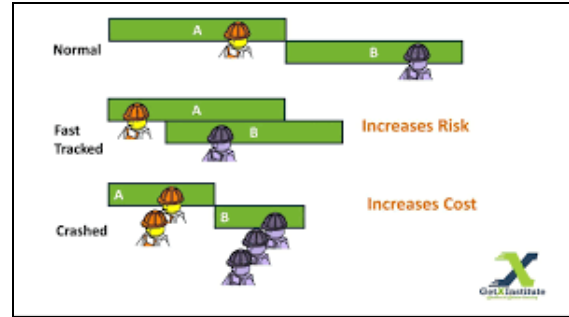


Figure 2
Fast Track Risk [4]

ANALYSIS APPROACH

To analyze the situation, accuracy methods were implemented to collect the data and develop studies and solving actions. The clock-in method implemented in the company was having accuracy issues. The company uses an app that all employees must install on their personal phones. Personal phones must be updated and have the time automatically synchronized with the cellular company.

Second was to determine if any internal situation was happening that can result in a failed clock-in. To make sure this happens, the human resources department scheduled bi-weekly meeting with all personnel. The idea was to create an open forum where everybody can express the internal situation and to explain how to use the clock-in app. Once this was fixed, the company collected data for 1 month and began the study.

The data for the first month is presented in Table 1. The absences averaged 13.4 per week during the first month. This effect increases from 15-25% the project cost. Project scheduled for 2 days were taking 3 or 4 days. Sometimes the crew moved to another project and a special team came to complete the project.

Table 1
Absence Monitor 1st Month

Absence Monitor Chart		
Weeks	Absences	Applications
Mar 1-6	11	Monitore Attendance
Mar 7-13	15	Stablish rules for Absence and present to employees
Mar 14-20	17	Monitore Attendance
Mar 21-27	13	Bi-Weekly meeting to hear the personnel
Mar 28 - Apr 3	11	Monitore Attendance

This delays also have an effect in the materials purchase. Since the quantity of projects expected to be completed in 6 months was not accomplished, the purchase must be made in less quantity, increasing the cost per item.

Simultaneously to the data collection, the company continued with the bi-weekly meetings and discovered there was a lack of tools to perform tasks. This increased the fatigue due to long days of work, eventually resulting in absences.

From the data collection it was found that the increase in the project cost were from 15-25%. This reduces the total earning from 30% to almost 20%, which projects to an annual loss of \$80,000.

For the second month, the company invested in new tools to reduce the fatigue and try to avoid absences. The result was decreasing the absences (as shown in Table 2) and the losses of the project.

Table 2
Absence Monitor 2nd Month

Absence Monitor Chart		
Weeks	Absences	Applications
April 4-10	10	Recognition Meeting and give Incentives
April 11-17	7	Monitore Attendance
April 18-24	5	Sfatey meeting and congratulate for the improvement in the attendance
April 25-30	5	Monitore Attendance

RESULTS

At the end of two months, the results reflected the reality of the company situation. The increase of the project cost due the personnel absences was very high and affect not only the cost but the animosity in general as well. The fatigue between the employees causes absences and affect the compromise as well. Continuously meeting with all personnel helped to understand the situation and point the right direction for the solution.

In the Figure 3 we can observe the result of two months of study since the company begin to understand the situation and apply some alternatives discussed between the employees: a reduction of 50% in absences. This projected annually represents a decrease in losses from 15-25% to 7.5-12.50%. The cost of the tools was recovered in two months.

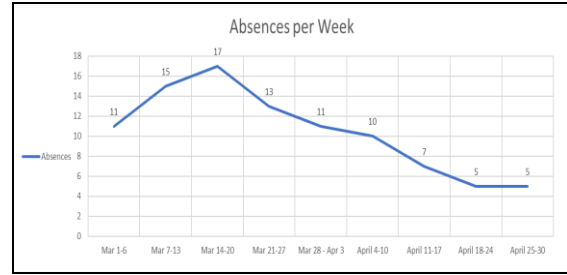


Figure 3
Absence Monitor trough 1st to 2nd month

CONCLUSIONS

As a conclusion, the impact of a situation cannot be measure if the company do not have the correct or accurate tools. The data cannot be trusted and cannot be used for projections. With the correct information, the company can know not only the effect, but also in which direction is the solution. Establishing an open conversation with the personnel will also provide knowledge of the issues to attend.

REFERENCES

- [1] Solar Industry Growing at a Record Pace (Solar Industry Research Data), Solar Energy Industries Association (SEIA), March 16, 2021, Available: <https://www.seia.org/us-solar-market-insight>
- [2] The Predictability of Fast-Track Projects, A. A. ALHOMADI 1*, R. DEGHANI and J. Y. RUWANPURA, Procedia Engineering 14 (2011)
- [3] The Impact of Fast Track Construction and Construction Management on Subcontractors, WILLIAM R. SQUIRES, III and Michael J. Murphy, 1983 by Law and Contemporary Problems
- [4] Fast Tracking: A Special Area of Risk Management, Anne Gromöller, April 7, 2017