



جامعة الجميع الذكية
EVERYONE'S SMART UNIVERSITY

Everyone's Smart University

Project (Spring 2021)

Student Name	Mohammed Hussein Al-Bandary	اسم الطالب
Students I.D	2021203114	الرقم الجامعي

Section

Master

Date

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Course Code

(PMG506)

Advanced project Management

Instructions:

- اخر موعد للتسليم هو يوم الخميس 2021-05-20 في تمام الساعة 9 مساءً.
- الإجابة متاحة باللغة الإنجليزية أو اللغة العربية مع مراعاة أن تكون المصطلحات العلمية باللغة الانجليزية.
- يتم تسليم المشروع في صيغة ملف pdf مع الالتزام نموذج الجامعة ولن تقبل أي مستندات أخرى.
- يجب مراعاة أقسام البحث الرئيسية (مقدمة Introduction، دراسات علمية سابقة Literature Review، طريقة البحث Methodology، النتائج والمناقشة Results and Discussion، وأخيراً المراجع References. وان كان هناك ملحقات Appendices يتم إضافتها)
- يجب الالتزام بـ Theme موحد كما يلي:
- حجم الخط 12.
- نوع الخط Arial.
- لون الخط أسود.
- المسافة بين الأسطر 1.5 line spacing
- عدد صفحات البحث (لا يقل عن ثلاث صفحات ولا يزيد عن ست صفحات).

Instructor's Name: ~~Eng. Amaal Aburumman~~ Eng. Dr. Akram M. S. Ali

Project:

You are required to document your role in administering a project. The project may be set in a business, social, sporting, or family environment but must be of a significant size and scale. If you do not have an actual project to write about you may complete the project hypothetically. **This report will be between three to six pages in length.** This is a significant research project.

Your report must address ~~each~~ **ONE** of the following issues:

1. Identify and describe the purpose, scope, and objectives of the project. **Display this information using an appropriate tool.**
2. Describe how the team is given an outline of the project.
3. Describe the strategies that are going to be set up to maintain communication with the team members.
4. Describe the tools that are going to be used to monitor the goals, time frames or milestones.
5. Identify project milestones and activities. **Display this information using an appropriate tool.**
6. Create a budget and link the costs to the key milestones for a project.
7. Describe how you are going to divide tasks and resources amongst a project team. **Display this information using an appropriate tool.**
8. Briefly describe how the progress will be monitored.
9. How are current project records maintained? Who has responsibility for this? provide some recommendations on how this process could be improved.
10. Describe the current procedure for finalizing projects. Create your own procedure and identify how you will evaluate the success of the project.
11. Legislation that may affect the project including health and safety, and anti-discrimination legislation.

Best of luck...

المشروع:

مطلوب منك توثيق دورك في إدارة مشروع. قد يتم تعيين المشروع في بيئة تجارية أو اجتماعية أو رياضية أو عائلية ولكن يجب أن يكون بحجم مناسب. إذا لم يكن لديك مشروع فعلي لتكتب عنه ، فيمكنك إكمال المشروع افتراضياً. سيكون هذا التقرير من ثلاث إلى ست صفحات.

يجب أن يعالج تقريرك كل من **أحد** القضايا التالية:

١. تحديد ووصف الغرض والنطاق والأهداف من المشروع. اعرض هذه المعلومات باستخدام أداة مناسبة.
٢. صف كيف يتم إعطاء الفريق مخططاً تفصيلياً للمشروع.
٣. وصف الاستراتيجيات التي سيتم وضعها للحفاظ على التواصل مع أعضاء الفريق.
٤. صف الأدوات التي سيتم استخدامها لرصد الأهداف أو الأطر الزمنية أو المعالم.
٥. تحديد معالم المشروع والأنشطة. اعرض هذه المعلومات باستخدام أداة مناسبة.
٦. إنشاء موازنة وربط التكاليف بالمعالم الرئيسية للمشروع.
٧. صف كيف ستقوم بتقسيم المهام والموارد بين فريق المشروع. اعرض هذه المعلومات باستخدام أداة مناسبة.
٨. صف بإيجاز كيف سيتم رصد التقدم.
٩. كيف يتم الاحتفاظ بسجلات المشروع الحالية؟ من المسؤول عن هذا؟ تقديم بعض التوصيات حول كيفية تحسين هذه العملية.
١٠. وصف الإجراء الحالي لإنهاء المشاريع. قم بإنشاء الإجراء الخاص بك وحدد كيفية تقييم نجاح المشروع.
١١. التشريعات التي قد تؤثر على المشروع بما في ذلك الصحة والسلامة ، وتشريعات مكافحة التمييز.

مع تمنياتي بالتوفيق..

Saudi Aramco North Admin Building Voltage Conversion Project

Ras Tanura

1. Introduction

Electricity demand in Saudi Arabia has increased significantly over the past 25 years. This resulted in frequent voltage fluctuations and power interruptions, specifically in Summer. Nowadays, Saudi Arabia and few other countries are utilizing a dual-voltage power distribution system in which 127 Volts is used for commercial and residential buildings, whereas industrial applications and large commercial buildings require 220 Volts for operation. Currently, more than 70% of world countries are using a 230/400 Volts distribution system **(Saudi Electricity Company, 2020) [1]**.

On August 31, 2010, the Kingdom of Saudi Arabia Council of Ministers approved the change of voltage to the international standard (400/230 Volts, AC, 60 Hz) as recommended by the International Electro-technical Commission (IEC); the organization that prepares and publishes international standards for all electrical, electronic, and related technologies **(Saudi Electricity Company, 2020) [2]**.

According to a study developed by a specialist team from the Ministry of Water and Electricity, several benefits can be derived as a result of upgrading the voltage to the new international standard 400V/230V. For example, standardization and uniformity of equipment and integration with the global system with minimum disruption, achieving low current levels which lead to low energy losses in the electrical system, lowering the costs by using fewer electric meters, reducing the cost of establishing electrical distribution networks by utilizing fewer cables, minimizing circuit breakers capacity in the electrical panels, efficiency enhancement of electrical appliances, and increasing the lifetime of the equipment **(Saudi Electricity Company, 2020) [2]**.

In compliance with the Saudi Government Directive, Saudi Aramco (SA) has decided to convert all its office buildings from the existing voltage of 208/120V to the new voltage standard of 400/230V. Presently, the vast majority of SA offices, facilities buildings sub-distribution systems, and electrical loads are based on the low voltage of 208/120 V. These buildings are fed from 13.8 kV/208-120 V or 480/208-120 V, 3Ph electrical system. SA has more than 2400 offices in the entire Kingdom in addition to 100s of plant facilities and buildings where office equipment is being used. It is essential to carry out all necessary works and projects which are required to convert all office buildings in SA from the existing voltage of 208/120V to the new voltage standard of 400/230V in a safe and cost-effective way.

This research paper aims to discuss the initiation phase of upgrading the voltage for Saudi Aramco North Admin Building which was conducted in Ras Tanura, 2018. The purpose of this project was to change the supply voltage in line with the Kingdom of Saudi Arabia Council of Ministers Directive for implementing the new voltage requirements of 400V/230V, whilst maintaining the current as AC and the frequency at 60Hz.

From a project management perspective, "Initiation is a critical stage that defines a project, determines its relevant goals and objectives, identifies the required resources and materials, sets up a schedule and plans budget, and assigns team members with unique skills to handle the project successfully" **(Usman, Kamau and Mireri, 2014) [3]**.

The research generally discusses the main deliverables of the initiation phase that a project manager should be responsible for. Such examples of these deliverables are creating a team charter including specifying the roles and responsibilities of the team members. Also, developing stakeholder responsibility matrix, identifying the statement of work, and finally defining the scope accurately and comprehensively.

2. Literature Review

This chapter delivers a literature review of the initiation process and its relationship to project success. **According to Project Management Institute PMI (2004)**, the scope of work can be defined as determining certain activities to obtain specific products, services, or results. PMI states that developing an accurate scope of work and determining project specifications at the initiation stage will provide a clear image for sponsors, stakeholders, and project managers of the triple constraints of project management (Scope, Budget, and Schedule) [4]. **According to Khang and Moe (2008)**, project initiation success is linked to the effective participation of stakeholders and team members, setting out project priorities, asking for materials and resources support, and achieving compliance with project regulations [5].

2.1 Measures of Project Initiation Process

A set of alternative projects after subjecting to feasibility study has to be explored and proposed in the initiation stage to achieve the required targets of the organization. "Project's definition, objectives identification, scope of work preparation, preliminary screening and evaluating of proposed alternative projects are primary measures and elements of the preparation phase of a project. Project priorities and objectives are selected in line with the organization's vision and mission and to the need of people" (Seifoddini, 1986) [6].

2.2 Capturing Scope of Work in the Initiation Process

"A group of major projects in Finland has been subjected to an empirical study on a questionnaire survey. It was noticed that portfolio management efficiency is associated with single project management in which the goals of the scope of the project are set in line with implementation strategy" (Miia Martinsuo and Paivi Lehtonen, 2007) [7].

2.3 Identification of Requirements in the Scope of Work

Without a clear identification of a scope of work requirements, chances of project success become little. "A focus on a qualitative context is acquired from a case study called California (DMV) project 1993 & American Airline project CONFIRM in 1994. It was identified that a well-preparation of the scope of work can lead to project success, whereas, incomplete requirements and unclear objectives are the key reasons for project failure" **(Tom Clancy, The Chaos Report, 1995) [8]**.

2.4 Examining the Scope Statement

The scope statement justifies the reasons for the project's existence, lists deliverables, and determines objectives. "To determine the importance of projects pre-planning, the Construction Industry Institute (CII) made a study by funding 53 capital facility projects to compare their potential schedule and cost performance. The study concluded that improved project predictability can lead to significant savings, and having a clear complete scope of work is mandatory to project success" **(Chung-Suk Cho and G. Edward Gibson Jr, 2007) [9]**.

2.5 Problems Associated with Project Scope

Poor scope of work can hinder a project's performance. "A research was carried out on the causes of failures of Web Projects. It was identified that a dislike of planning was the major reason for failure. Several problems can arise with a project's scope, for example, inaccuracy, non-clarity, Incomplete, non-finalizing documents, and not sharing scope statement with concerned parties" **(Fichter, 2003) [10]**. A clear scope with highlighting major milestones can minimize the chances of future conflicts with stakeholders and suppliers.

3. Methodology

This chapter focuses on the implemented methodology for this research. "The qualitative approach and quantitative approach are the two basic approaches to a research" **(Kothari 2004:5) [11]**. "A third approach is a combination of the two basic approaches" **(Carrie Williams, 2007) [12]**.

3.1 Data Types

The most important part of the research process is data collection. The data to be collected can be classified into two types: Primary and Secondary data. To differentiate between the two, the primary data is initially obtained by the researcher for research purposes and gathered for the first time, however, the collection process may take a long time. Moving to secondary data, "it is a group of data that was collected by someone else who is not intending to use it for research purposes which can lead to inaccurate data gathering. In other words, the bigger chances of gathering inaccurate data are considered as a disadvantage of this data collection process" **(Kothari, 2004:95) [13]**.

3.2 Data Collection & Analysis

Due to the availability of previous survey results, the research depended on using the initial secondary data as the primary data is time-consuming and resource-heavy to collect. As the voltage conversion program is "a project that can be expressed in quality rather than quantity, the research methodology used for collecting and analyzing the data is the qualitative approach" **(Kothari, 2004:1-2) [14]**. The data collection and analysis process for this project was handled by a specialized third-party Saudi Aramco-approved vendor who was awarded a lump-sum contract for handling this job.

4. Discussion and Results

Even though the initiation phase of any project includes stakeholder identification, team building, and rules establishment, but this section is intended to outline in detail the definition and scoping of the voltage conversion project which was conducted for Saudi Aramco North Admin Building in Ras Tanura.

Voltage Conversion Project for Saudi Aramco North Admin Building in Ras Tanura		
Solicitation & Provisions		
1	General Instructions	The work to be performed per Service General Contract - Contractor to submit survey, detail design and construction schedule based on Critical Milestone Dates' to company approval
2	Bid Submission	Contractor to submit a lump sum bid to supply all labor, permanent, temporary and expendable materials and equipment - Contractor to acknowledge understanding all requirements
3	Materials	All supplied materials must be from a Saudi Aramco approved vendor - Contractor to submit samples of materials prior to procurement - All supplied materials to be new with warrantey
4	Specific Instructions	Site investigation is required to verify field dimensions and measurments - Contractor to preserve and protect all structures and equipment on and adjacent to the work sites
General Requirements		
1	Work Schedule	The building to be in operation with minimal interruptions throught the duration of the work - Work to be executed after working hours -
2	Safety Requirements	Contractor to install Arc Flash and Shock Hazard Warning Labels on all new electrical distribution equipment - Contractor to provide full time and qualified site safety staff
3	Codes and Standards	Engineering standards must be followed strictly. Examples : (ANSI: American National Standard Institute / IEEE: Institute of Electrical & Electronics Engineers / SAES-M-100: Saudi Aramco Building Code)
4	Abbreviations List	Contractor to be familiar with all common abbreviations. Examples: (1-ph: Single Phase / 3-ph: Three Phase / BS: British Standards / DB: Distribution Board / IT: Information Technology)
Technical Requirements		
1	Mechanical - HVAC	Contractor to shut-off Air Handling Unit serving the area prior to start of any work - Contractor to test and balance air distribution system with +/- 10% of required airflow rates
2	Plumbing	Contractor to shut-off boundary or isolation valves of the supply water lines and its complete appurtenances prior to start of any piping work
3	Fire Detection	Contractor to lock-out/ disconnect power supply before the start of any electrical activity to protect personnel from possible shock hazard
4	Electrical	Contractor to install new stepdown transformer rating 230/24V for fire alarm and 230/12V for water leakage detector - Electrical circuits shall emanate from the same existing replaced panel board and branch circuits - Contractor to change the supply voltage of all the equipment utilizing either 208V or 110V. All the affected entire circuit loop shall be changed from 208V phase-phase or 120 V phase-neutral to 230 V phase to neutral configuration - To provide new panelboards to fixing supports and fittings

Table 1: Some Sections included in the Scope of Work of Saudi Aramco North Admin Building Voltage Conversion Project.

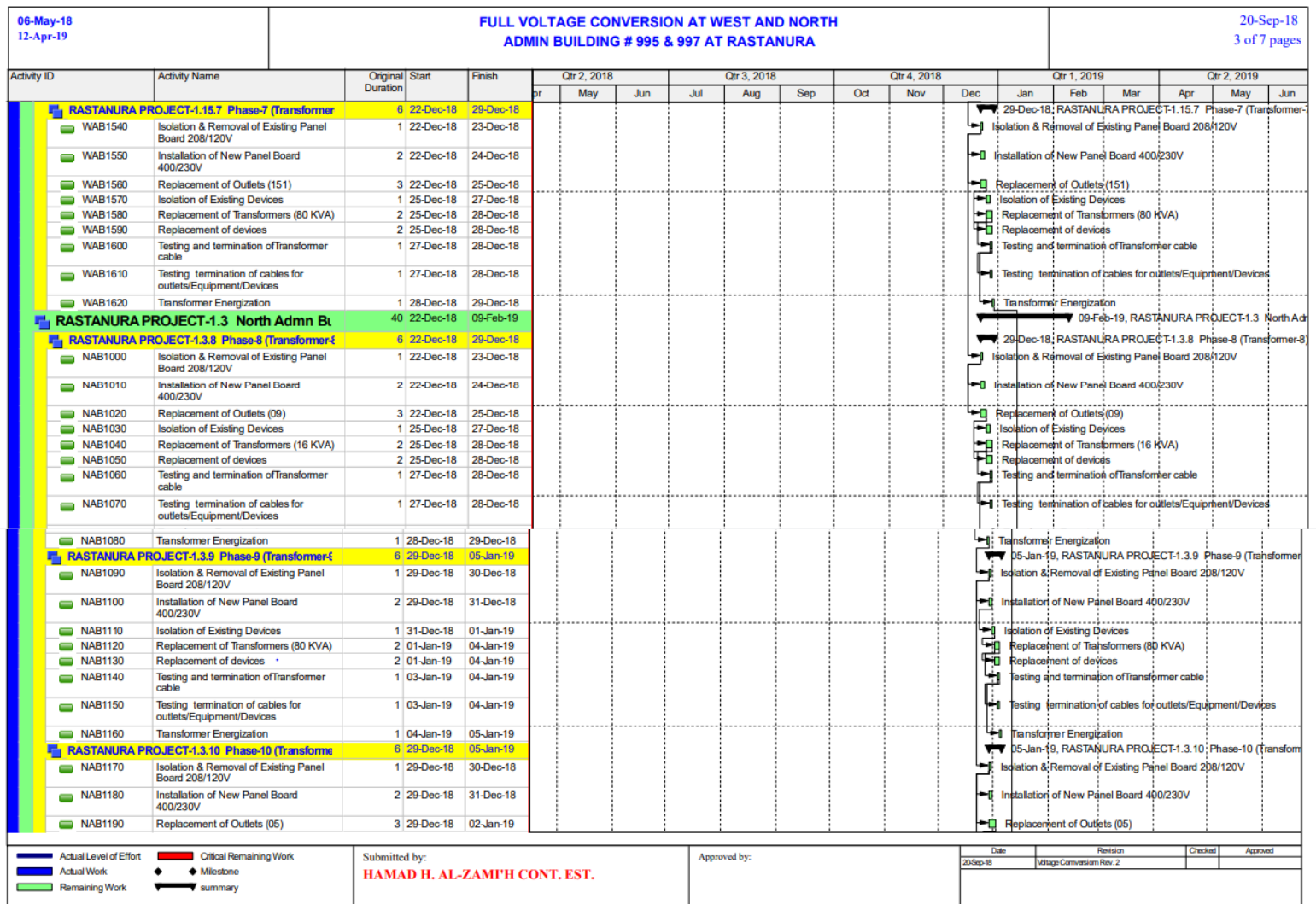


Figure 1: A Section of the Construction Schedule of Saudi Aramco North Admin Building Voltage Conversion Project.

5. Conclusion

Defining a project scope is a vital task to ensure smooth project operation and avoid interruptions in later stages. "An important consideration for a project manager is that a project scope has to be accurately developed with taking into consideration the tasks to be performed to avoid any future changes which may pop up and affect the project's performance negatively" (Gibson et al., 2006) [15].

6. References

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