



جامعة الجميع الذكية
EVERYONE'S SMART UNIVERSITY

Everyone's Smart University

Project (Spring 2021)

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Section

Master

Date

Thursday

18 / 03 / 2021.

Course Code

(PMG506)

Advanced project Management

Instructions:

- اخر موعد للتسليم هو يوم الخميس 2021-05-20 في تمام الساعة ٩ 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.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 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. سيتمكنون هذا التقرير من ثلاث إلى ست صفحات .

يجب أن يعالج تقريرك كل من القضايا التالية:

1. تحديد ووصف الغرض والنطاق والأهداف من المشروع. اعرض هذه المعلومات باستخدام أداة مناسبة.
2. صف كيف يتم إعطاء الفريق مخططاً تفصيلياً للمشروع.
3. وصف الاستراتيجيات التي سيتم وضعها للحفاظ على التواصل مع أعضاء الفريق.
4. صف الأدوات التي سيتم استخدامها لرصد الأهداف أو الأطر الزمنية أو المعالم.
5. تحديد معالم المشروع والأنشطة. اعرض هذه المعلومات باستخدام أداة مناسبة.
6. إنشاء ميزانية وربط التكاليف بالمعالم الرئيسية للمشروع.
7. صف كيف ستقوم بتقسيم المهام والموارد بين فريق المشروع. اعرض هذه المعلومات باستخدام أداة مناسبة.
8. صف بإيجاز كيف سيتم رصد التقدم.
9. كيف يتم الاحتفاظ بسجلات المشروع الحالية؟ من المسؤول عن هذا؟ تقديم بعض التوصيات حول كيفية تحسين هذه العملية.
10. وصف الإجراء الحالي لإنهاء المشاريع. قم بإنشاء الإجراء الخاص بك وحدد كيفية تقييم نجاح المشروع.
11. التشريعات التي قد تؤثر على المشروع بما في ذلك الصحة والسلامة ، وتشريعات مكافحة التمييز.

مع تمنياتي بالتوفيق..

Introduction:

The first idea for any business is the need, the need to build or produce, or the need to change or develop ... etc.

Project management science consists of many stages, tools, and a set of different mechanisms and techniques that are used in the stages of project implementation and development. A project's life cycle is the stages that a project goes through from its inception to its closing.

The Hawiyah-Haradh gas compression project is in the execution phase and my roles and responsibilities as PE¹ in SA² as follows:

- Participate in meetings to discuss/review value engineering, PHA³, risk assessment, and technical review of the design packages.
- Continue to follow up on project exception closeout until all outstanding issues are resolved.

We in the SAPMT⁴, especially in the gas compression department, are involved in the implementation of Hawiyah-Haradh gas compression incremental program to build several plants after the objective, scope of work and the project strategy have been drawn up that states.

Program Objective:

Support the kingdom's energy demands and provide an increment gas production of 1.1 Billion SCFD⁵.

Scope of work:

The project consists of three main packages which are North, South and Satellite gas compression plants.

Project strategy:

Seeking for opportunities and ways of differentiation

- Through a deep analysis of FEED⁶.
- Through gathering of know-how /lesson learned from previous Aramco's project.

¹ Project engineer

² Saudi Aramco

³ Process Hazard analysis

⁴ Saudi Aramco project Management Team.

⁵ Standard Cubic Feet/Day.

⁶ Front End Engineering Design

Literature view:

SA pays great attention to the implementation of its various projects with the highest standards of accuracy and excellence, including that it devotes an independent department to care, preservation, and follow-up lessons learned from various projects around the world. Therefore, once a new project idea is started, the lessons learned team is contacted to give full attention and support to the team in charge of the new project.

Before the start and since the idea was a spur of the moment, the team that will adopt the project was formed. and after the idea crystallized and was approved by the SADD⁷ and transferred to the SAPMT, the required documents were prepared and presented to the team of lessons learned for modification and advice.

Many workshops were held with several teams from different parties, SA and those with a PMC⁸ in implementing projects.

The entirety of the study in this project focused on the Al-Fadhili GP⁹ project, as it was one of the development projects of SA after an experimental work was shown at the beginning of 2015 by reducing energy consumption by more than 60 GW¹⁰ per year and reducing the total greenhouse gases produced in the plant to less than 60 T¹¹ of carbon dioxide emissions per year. It is also environmentally characterized by its advanced technologies that achieve the maximum rate of sulfuric extraction by 99.9%, which helps in protecting the air quality.

Studies are still ongoing in the Al-Fadhili GP project, and their results are reflected in Hawiyah Haradh gas compression incremental project (the research student is one of the project members), especially in regard to raising the processing capacity and generating electricity for fields coming from onshore and offshore.

⁷ Saudi Aramco Development Department

⁸ Project Management Consultant

⁹ Gas Plant

¹⁰ gigawatts

¹¹ Tones

Methodology:

As a project engineer for one of the executing plants, we started the main role from the very first moment of the project, and after the main contractor was identified, we went directly to Spain, Madrid, where the contractor's headquarters for the OOK¹² project schedule:

- o Notification to PO¹³
- o PO for GIS¹⁴ and 230 KV¹⁵ power transformer.
- o 30% DR¹⁶
- o PO for engineered equipment.
- o 60% DR
- o IFC¹⁷ for foundation and early work.
- o 90% DR

We started the process of selecting the subcontractors from the bidding conference through all the processes and ending with their selection. After that, the engineering design works started from 10% to 90% until we completed all documents related to the project and returned to the project site.

The team work was formed based on their experiences and academic qualifications, and I must mention here that continuous meetings were held for the team work to reached an effective and successful team work was built capable of leading the project in the right direction, for example the company's entertainment area was reserved to performed a team activities was called team building that contained its activities such as interactive Sports for everyone, which helped build effective team relationships.

- o Start site mobilization
- o Place main subcontractor.
- o Start construction (first foundation)
- o All electrical system energized.
- o Project final MCC¹⁸.

¹² Out of Kingdom

¹³ Purchase Order

¹⁴ Gas Insulated Switchgear

¹⁵ Kilo volte

¹⁶ Design review

¹⁷ Issued for construction

¹⁸ Mechanical completion certificate

First stage and before the work began, the milestones were divided into tasks and then to WB. By breaking a project down into work packages, the development of Work Breakdown Structures becomes easier—and project engineer will have a finer level of control over assignments.

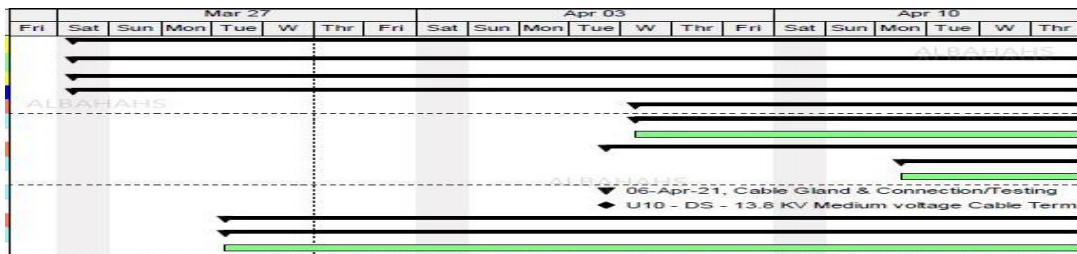
Activity ID	Activity Name	OD	RD	Start	Finish	Total Float
27NOV2020	-Actual-Forecas Sch -Haradh Field Gas Compression Project -E.P.C.	90	120	27-Mar-21	13-Sep-21	144
Construction		90	120	27-Mar-21	13-Sep-21	144
AREA 1 - North Haradh Gas Compression Project (NGCP)		90	120	27-Mar-21	13-Sep-21	144
U-10	Hawiyah GCP-1 (510)	75	90	27-Mar-21	01-Aug-21	35
Buildings		45	45	07-Apr-21	29-May-21	36
HVAC Testing		45	45	07-Apr-21	29-May-21	36
C1100HVHT10020	U10 - Distribution Substation - HVAC Testing	45	45	07-Apr-21	29-May-21	36
Electrical Works		44	44	06-Apr-21	07-Jun-21	2
Electrical Equipment Installation		48	48	12-Apr-21	07-Jun-21	2
C1100ELEQ10080	U10 - Distribution Substation - SCADA Installation (by others)	48	48	12-Apr-21	07-Jun-21	2
Cable Gland & Connection/Testing		0	0	06-Apr-21	06-Apr-21	0
C1100BUCC10071	U10 - DS - 13.8 KV Medium voltage Cable Termination incl. Transformer area	0	0	06-Apr-21	06-Apr-21	0
Instrumentation Works		75	95	30-Mar-21	01-Aug-21	40
Fiber Optic Cable Pulling		75	95	30-Mar-21	01-Aug-21	40
C1100INFO10070	U10 - Fiber Optic Cable Pulling	75	95	30-Mar-21	01-Aug-21	40

The major construction works of the project have started, including infrastructure and employees' facilities. Basic software was used in project management, for example MS project to follow up the project works progress and to determine the main project milestones and make comparisons between what has been completed and what is still in progress.

PACKAGE 1 - North	WEIGHT %	WEEKLY PROGRESS			CUMMULATIVE PROGRESS		
		Contract Amendment	Actual	Deviation	Contract Amendment	Actual	Deviation
Hawiyah GCP-1 (510)	35.71	0.51	0.49	-0.02	73.65	75.23	1.58
Haradh GCP-1 (520)	30.01	0.06	0.05	-0.02	68.10	68.75	0.64
Haradh GCP-2 (521)	27.59	0.04	0.04	0.00	67.30	67.63	0.33
Hawiyah LSS (510-008)	2.32	0.74	0.21	-0.52	55.77	57.57	1.80
North Admin Area (511-512)	4.36	0.28	0.02	-0.26	74.17	70.61	-3.57
Total	100.00	0.24	0.21	-0.04	69.84	70.58	0.73

The main communication method for the project was interactive meeting and e-mail, where each team member sends the required data (daily or weekly) to each project engineer, for example:

The process of monitoring the main milestone of the project is done by following up with modern technologies such as MS project and with follow-up from site superintendents.



Upon completion of one of the main milestones of the project, an official letter will be sent to all stakeholders (proponents¹⁹,PID²⁰,POD²¹,LPD²²,safety , security and IT²³) for walkthrough and to record all pinch items regarding that milestone in Saudi Aramco's internal system called MPCS²⁴.

Therefore, the punch items are recorded from all stakeholders, the system is closed and the process of closing those items begins in different ways, for example:

- Accepting the items that were provided above the requirements of SA standards.
- Rework the items that violate and don't meet the requirements of SA standards.
- Negotiate items that are inconsistent with SA standards but don't affect operations process.

After all the punch items related to this system are closed, the facility will be handed over to the proponent for start-up.

Finally, collected all documents and reports necessary to finish this stage and to deliver the lessons learned.

¹⁹ Plant owners

²⁰ Project inspection department

²¹ Power operation department

²² Loss prevention department

²³ Information technology

²⁴ Mechanical and performance closeout system

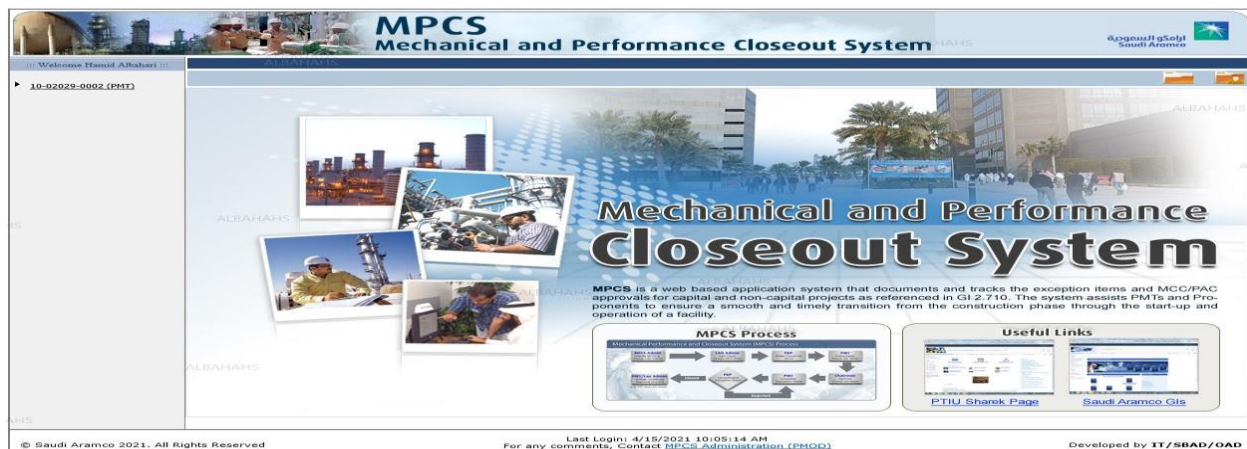
Result and Discussion:

Through lengthy meetings, workshops, and continuous support from the Lessons Learned department, and compared to the progress of work in the Al-Fadhili project, all the problems faced by the team with previous projects were addressed and advanced technologies were applied to reduce gas emissions by a greater rate.

It was necessary to Prioritize the tasks because as I mentioned earlier, our project is based on the construction of 9 plants. The benefits of this prioritization are reduced stress and increased productivity.

Divided the milestones into tasks, then WB helps us to determine the direct labor costs, the direct costs for material, equipment, travel, contractual services, and other non-personal resources, as well as the indirect costs associated with each of these work packages.

Appointing a special team to deal with change requests had a great impact in solving most of the problems and applying changes in early stages to avoid re-work.



References:

1. SA ALFadhli Gas project
2. SA engineering procedures.
3. SA engineering standards.

