



جامعة الجميع الذكية
EVERYONE'S SMART UNIVERSITY

Everyone's Smart University

Project (Spring 2021)

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Section

Course

Master

(PMG506)

Code

Thursday

Date

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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...

Upgrade Emerson DCS operator stations and server project in power plant

1. Introduction:

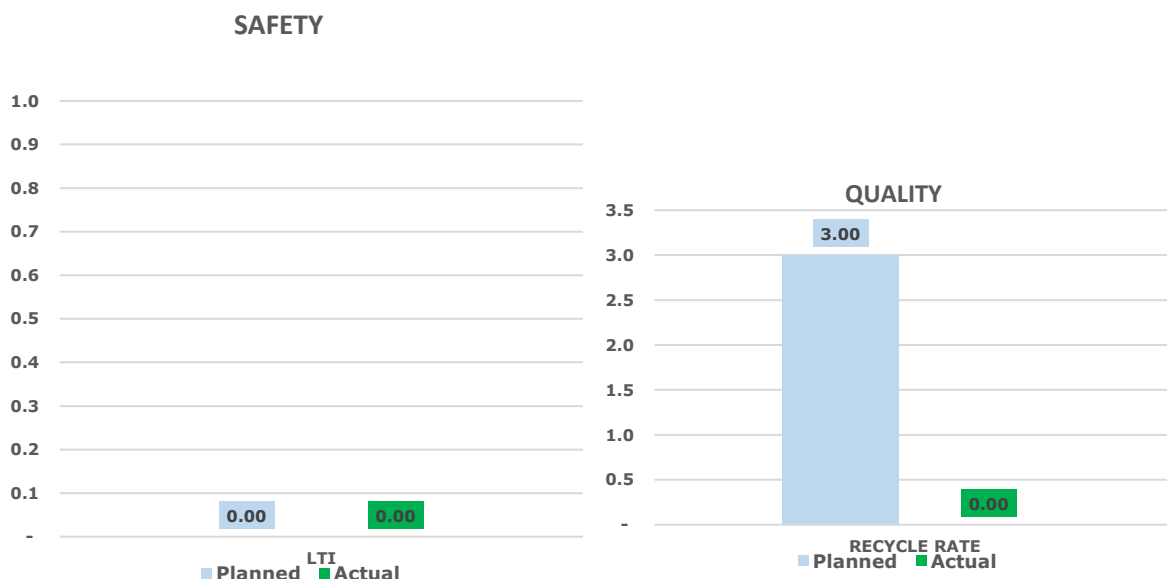
The Project Execution Strategy Document is prepared at the initiation phase of the project to outline the “logical foundation” underlying the venture to be undertaken and requirements for its development. It aims to ensure alignment of key stakeholders on the premises and needs at the beginning of the project. The information also provides initial input for most of the Stage Gate deliverables developed during the Conceptual approval stage (Scouting Study stage).

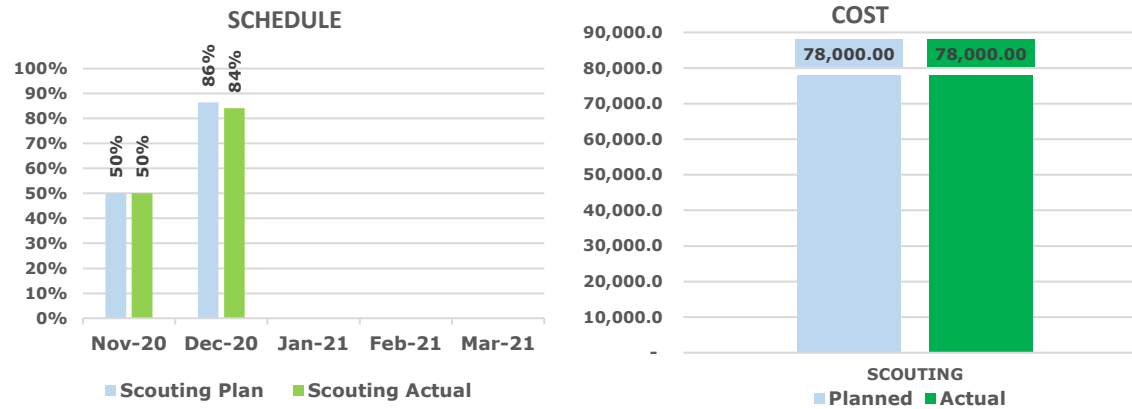
The project scope is to upgrade Emerson DCS operator stations and server with latest version in power plant. The current power plant present distributed control system (DCS) & Machine conditioning and monitoring system (MCMS) is supplied by Emerson. Emerson DCS & MCMS system’s workstation & servers have Windows 7 & windows server 2008 operating systems and Microsoft announced on 14 Jan 2020, support for Windows 7 and Windows server 2008 support has been stopped. Microsoft will no longer provide security updates or support for PCs running with window 7 & server 2008, In view of above the project is to upgrade obsolete Emerson DCS operator stations and server with latest version. My role in project is one of critical team member which represent business unit.

1.1 Key Performance Indicators (KPI's):

The KPIs for the project are Safety, Quality, Schedule and Cost and these are as given below:

- Safety – Zero Loss Time Injury (LTI)
- Quality – There shall not be more than 3 recycle of any of the deliverables
- Schedule: Please refer the Schedule graph below
- Cost: SAR 69,000 (please note that this is the estimated cost of team members involved in the scouting phase)





1.2 Roles & responsibility: by using RACI method, the below Table for Roles and Responsibilities is as per the approved PES Procedureⁱ mentions the roles and responsibilities for each assigned department in a detailed manner.

Deliverables	FPD	TSD	PE	PJ	BU	PSD	P&C	ISD	Finance	R&AM	CoE	QA/QC
PES1												
Study of Strategic Options	A	R	C		C							
Pre-Feasibility Report	A	R	C	I	C							
Technology Assessment	A	R	C		C							
Site, raw material and utilities availability	A	R		I	I			C				
Marketing Study	A	R		I	C							
Risk Assessment	A	R	C	C	C	R	C	C			C	C
Stakeholder Management and communication plan	A	R		I	I							
Lessons learned	A	R	C	C	C	C	C	C			R	C
Project Segmentation Analysis	A	R	C	C	C	C	C					
Feasibility Scope	A	R		C			I					
P&C Strategy	A					C	R					
Initial Cost Estimate (Class 5)	A	R		C								
Preliminary Schedule	A		C	I	C	R	C					

■ R= responsible
 ■ A= accountable
 ■ C=consulted
 ■ I= informed

1.3 Communication & Management Plan

All the stakeholders are being communicated through regular meetings/ visits/ email / conference calls. All the inputs from the stakeholders are included in the documents prepared and thereafter circulated to all stakeholders for their review and comments. Also, there is a final sign- off by all the stakeholders upon completion of each stage before submission to the gatekeeper.

1.4 Economic Evaluation:

The economic evaluation shall address the following aspects if these are applicable to the project.

- Annual P&L and CF forecasts for the investment horizon (with clearly defined assumptions)

- Project economics (e.g., NPV, IRR, payback period)
- Sensitivity analysis for changes in key assumptions
- Impact of the project on financial variables and ratios

However, as per the PES Procedure Economic Evaluations are not required for major projects and if it is classified under Medium touch category for non- profitability project category. This particular project is major as well as under Medium touch and safety project category economic evaluations are not required.

1.5 Project Schedule: Project schedule is prepared by PSD and reviewed and accepted by the team

2. Literature review:

This research highlight approach for accurate estimation cost of projects using the Project Evaluation and Review Technique (PERT) and expert views as fuzzy numbers. The proposed method included several steps. In the first step, the necessary information for project time and cost is estimated using the Critical Path Method (CPM) and the Project Evaluation and Review Technique (PERT). The second step considers the duration and cost of the project activities as the trapezoidal fuzzy numbers, and then, the time and cost of the project are recalculated. The duration and cost of activities are estimated using the questionnaires as well as weighing the expert opinions, averaging and defuzzification based on a step-by-step algorithmⁱⁱ. Cost overrun is a chronic problem across most projects. While a significant research has been published on this topic, the understanding of the root causes and a clear direction towards improvement remained unexplored. The focus of the past research is mainly on the factors directly or indirectly associated with the project environment and their relative impacts on overall cost performance in projects. In contrast to such traditional approach, this research aimed to establish a conceptual model by identifying the underlying issues associated mainly with the perceptions of the board stakeholders involved over entire lifecycle of projects. Based on a structured interview with a few selective organizations, data was collected and a few rich pictures were developed over every phase of project development. By employing the soft system methodology, the rich pictures were later transformed into the concept models for potential establishment of a new body of knowledge in the fieldⁱⁱⁱ.

3. Methodology:

Scouting Stage Cost and Class 5 Cost Estimate for the project are prepared and given below:

Scouting Stage Cost Estimate			
No.	Description	Man Hours	Estimated Cost
1	Considering average salary of SAR 20,000/month and 240 Hours in a month, hourly rate will be about SR 85.		
2	Team Leader Cost (30 days x 8 Hours)	240	20,400.00
3	Site Visit (4 members x 3 Hours)	12	1020.00
4	11 Team Members Cost (10 Days x 6 Hours)	660	56,100.00

Total Cost	77,520.00
COST ESTIMATE	78,000.00

It may be noted that the project is in scouting stage and preliminary scope of work and conceptual drawings are the main available documents. As per PES procedures, Class 5 Cost Estimate is prepared. The estimation technique followed is analogous estimation. Basis of the estimate are as given below:

Cost Estimation Method: Analogous Estimate

Basis of Estimate: Cost for previous Contract P.O. No. 7200024430

Assumptions made: Engineering judgment for different items as applicable.

Exclusion: Owners' Cost

Based on the above, please find below the Class 5 Cost Estimate that includes all the items considered for cost estimation but without cost data. As per higher management direction Cost Estimate is classified as confidential information and should not be shared with all.

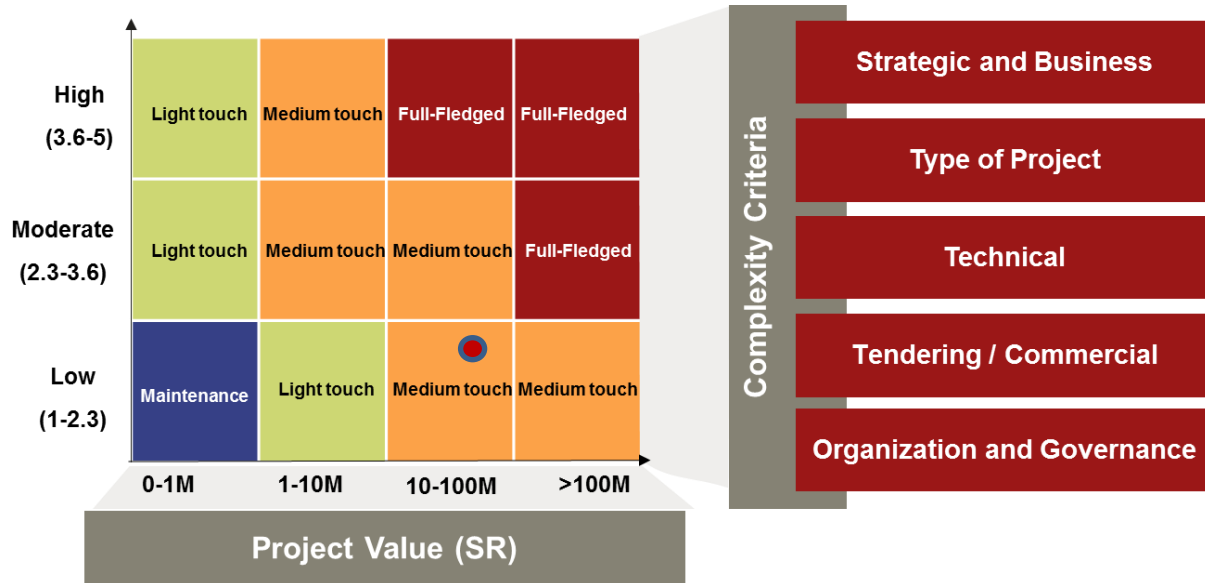
Class 5, Cost Estimate		
No.	Item	Unit Nos
A	DCS	
1	Supply, installation, commissioning & Upgrade Operator Workstations for DCS	61
2	Supply, installation, commissioning & Upgrade with complete hardware and software licenses	21
C	AV server	
1	Supply, installation, commissioning & Upgrade Anti virus Servers with complete hardware and software licenses	1
2	Sub Total (A+B+C)	
3	Mobilization and De-Mobilization (3% of Item No.2)	
4	Engineering and Design (6% of Item No.2)	
5	Training (2% of Item No.2)	
6	Spares (10% of Item No.2)	
7	Sub Total B(item 2 to 6)	
8	Contingencies (10% of Item No. 7)	
9	Contractor's profit margin (15% of Item No. 7)	
10	Escalation (2% of Item No.7)	
11	Sub Total C (item 7 to 10)	
	TOTAL COST ESTIMATE	TBD

Summary: Considering the Scouting Stage Cost and Class 5 Cost Estimate, the overall budget for the project is as given below:

- A. Scouting Stage Cost: MSR 0.078
- B. Class 5 Cost Estimate: MSR X
- C. Overall Budget: MSR X

Based on the cost estimation, this is a medium touch project (> 10 MSR but < 100MSR) and needs to be approved by higher management.

- **Project Segmentation Analysis:** The project is having an estimated cost of more than 10MSR but less than 100MSR and complexity score of 1.84. The project is located in the below project segmentation matrix where X-axis is the cost range and Y-axis is the complexity score. The project will be of Medium Touch category.



- **Actions Log** for the project during the scouting stage as per the approved format.

- **Stakeholders Sign Off Sheet:** Stakeholders Sign Off is endorsement of the role as per RACI agreed.

- **Critical decisions log** are the ones, taken during the scouting stage that are vastly different from the initial scope of work. Considering this aspect, there are no critical decisions taken during the scouting stage. All the team members agreed on the preliminary scope of work prepared for the project and there are no major changes proposed. However, following critical decisions taken by the team for the way forward of the gate evaluation:

- 1) Technology Assessment waiver
- 2) Sole source approval during FED stage.

4. Summary & Conclusion:

Based on the Feasibility Study carried out, it noticed that the project is technically feasible & team recommends to proceed further to upgrade the existing obsolete Emerson ovation DCS and MCMS operator stations and server with latest version. The present operating system Window 7 & window server 2008 are obsolete & to mitigate any Vulnerability associated with Automation system and reduce further cybersecurity risk needs to be upgraded. This capex will improve reliability of Power generation plant. All the control & monitoring system will be active so that all the major equipment's are continuously

monitored as well as there is no interruption of power to our valuable customers. Implementation of the project will meet the business and strategic objective of assigned power plant to ensure reliability & sustainability, and it will improve image as a preferred utility supplier.

Reference:

ⁱ the approved PES Procedure No. MVEP-1-CE-300 for Project Gating System

ⁱⁱ Habibi, F., Birgani, O., Koppelaar, H & Radenović, S. (2018). Using fuzzy logic to improve the project time and cost estimation based on Project Evaluation and Review Technique (PERT). Journal of Project Management, 3(4), 183-196.

ⁱⁱⁱ [Understanding stakeholders' perspective of cost estimation in project management - ScienceDirect](#)

.....End.....