



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

(PMG510)

Project Risk Management

Instructions:

- اخر موعد للتسليم هو يوم السبت 08-05-2021 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 ١٢.
- نوع الخط Arial.
- لون الخط أسود.
- المسافة بين الأسطر line spacing 1.5
- عدد صفحات البحث (لا يقل عن ثلاث صفحات ولا يزيد عن ست صفحات).

Instructor's Name: Eng. Mosaab M. Hamed

Project:

Risk Identification and Analysis (Based on the project you chose in APM)

The objective of this report is to identify project risks, prepare a risk probability matrix, and carry out an analysis of selected risks. Referring to the project you select in **Advanced projects management APM course**, your task is to prepare a risk management plan that identifies potential risks in **the selected stage of the project** and identify risk management strategies.

From the course content and readings, you know that the overall purpose of risk planning is to anticipate possible risk events and be ready to take appropriate action when risk events occur—to eliminate or reduce negative impacts on the project.

You may wish to begin this exercise with a brainstorming about potential risks to get candidate risks “on the table” for consideration. And then identify and refine that wording for risks that have some realistic chance of occurring in this stage. For example, potential weather problems present a real obstacle to completing field data collection by the planned completion date. It is also an issue that the project manager will ultimately have to plan for, as opposed to other issues such as a major disaster (e.g., your office burning down), is not a high-enough probability event that requires much time in planning. As described below, you will select several of the identified risks and carry out a risk analysis.

You will use the distilled list of risks to make a risk probability/impact matrix. The matrix will have at least three categories (high/medium/low) for probability and impact.

Remember that it is important to name risks effectively—use words that describe the risk event and point to the impact on the project (e.g., “injury of field technician disrupts data installation work”).

After completion of the risk matrix, document a risk analysis for the selected risks. This detailed documentation for that selected risk will include:

- a description of the risk and potential impacts (schedule, quality of work, cost, etc.) on the project.
- indicators or triggers that would be monitored to help identify the risk as early as possible.
- specific risk response strategies to take.

Using probability and impact matrix calculate the **Expected Monetary Value (EMV)** for all risks that have the impact in terms of cost \$\$.

Best of luck...

المشروع:

التعرف على المخاطر وتحليلها (بحث مبني على مشروعك الذي اخترته في مادة ادارة المشاريع المتقدمة)

الغرض من هذا التقرير هو التعرف على المخاطر المحيطة بالمرحلة التي تختارها المرحلة من مراحل مشروعك (نفس المرحلة التي اخترت التطرق لها في مشروعك لمادة إدارة المشاريع المتقدمة Advanced project management) حيث أن مهمتك هي تحضير خطة متكاملة لإدارة المخاطر تشمل التعريف بالمخاطر المحتملة التي تحيط بتلك المرحلة وتحضير مصفوفة احتمالية المخاطر ومن ثم القيام بالتحليل لهذه المخاطر المختارة وتحديد استراتيجيات ادارة المخاطر المناسبة لكل خطر على حدة.

من محتويات المقرر والمصادر الأخرى المتاحة أصبحت تعلم الان أن الغرض العام لمرحلة التخطيط للمخاطر هي توقع أحداث المخاطر المحتملة والتجهز لاتخاذ ردة الفعل المناسبة عند وقوع الخطر – لمنع أو تقليل الاثار السلبية على المشروع.

قد تحبذ بداية هذا البحث بعصف ذهني عن ماهية المخاطر التي قد تحيط بتلك المرحلة من مراحل مشروعك, وذلك للحصول على قائمة بتلك المخاطر. ومن ثم تحديد وتصفية هذه القائمة للوصول إلى قائمة مختصرة بالمخاطر التي لها فرصة واقعية أكبر في الحدوث. على سبيل المثال: المشاكل الجوية المتوقعة والتي تمثل عقبة حقيقية أمام اكتمال جمع البيانات من المواقع في أو قبل الوقت المحدد، هذه تعتبر مشكلة على مدير المشاريع أن يضعها في الحسبان. من ناحية أخرى، فإن المخاطر غير الواقعية مثل الكوارث الطبيعية والأعاصير (تلك التي تسبب حريقاً بمكتبك وفقدان الأوراق المهمة) ليست لها احتمالية وقوع عالية وبالتالي لاتستدعي تضيق الكثير من الوقت في التخطيط لها. كما سيتبين لك، ستقوم باختيار عدة مخاطر من تلك التي قمت بالتعرف عليها لتحليلها.

ستقوم باستخدام هذه القائمة المختصرة لعمل مصفوفة المخاطر (الاحتمالية/الأثر). المصفوفة ستحتوي على الأقل على ثلاث تصنيفات (عالي/متوسط/منخفض) للإحتمالية والأثر.

لاتنس استخدام أسماء تصف طبيعة المخاطر بصورة فعالة – قم باستخدام كلمات تصف الحادثة الخطرة وتشير الى أثرها على المشروع (مثل: إصابة أحد الفنيين في الموقع مما يؤثر على أعمال التركيب).

بعد انتهاءك من مصفوفة المخاطر، قم بتوثيق تحليلك للمخاطر المختارة. هذا التسجيل المفصل للمخاطر يجب أن يتضمن:

- وصف للخطر واثاره المحتملة (الجدولة، جودة العمل، التكلفة، الخ)
- المؤشرات والمحفزات التي يجب مراقبتها للمساعدة في التعرف على هذا الخطر قبل وقوعه
- تفصيل للاستجابة المقترحة للتصدي لهذا الخطر

باستخدام مصفوفة الاحتمالات والتأثير ، احسب **القيمة النقدية المتوقعة (EMV)** لجميع المخاطر التي لها تأثير من حيث التكلفة \$\$.

مع تمنياتي بالتوفيق..

Restoration of Saudi Aramco Abqaiq Plant which Exposed to Attacked

Introduction:

Risks are defined as undesirable or unexpected events with mostly positive or negative consequences. Consequently, risks may occur in all aspects of life, whether at the personal level of exposure to injuries or loss of property or at the institutional level such as organizations and companies such as delayed delivery of projects or work injuries or exposure to material losses, so effective solutions had to be found to avoid all these risks, which is known today as the approach of risk management.

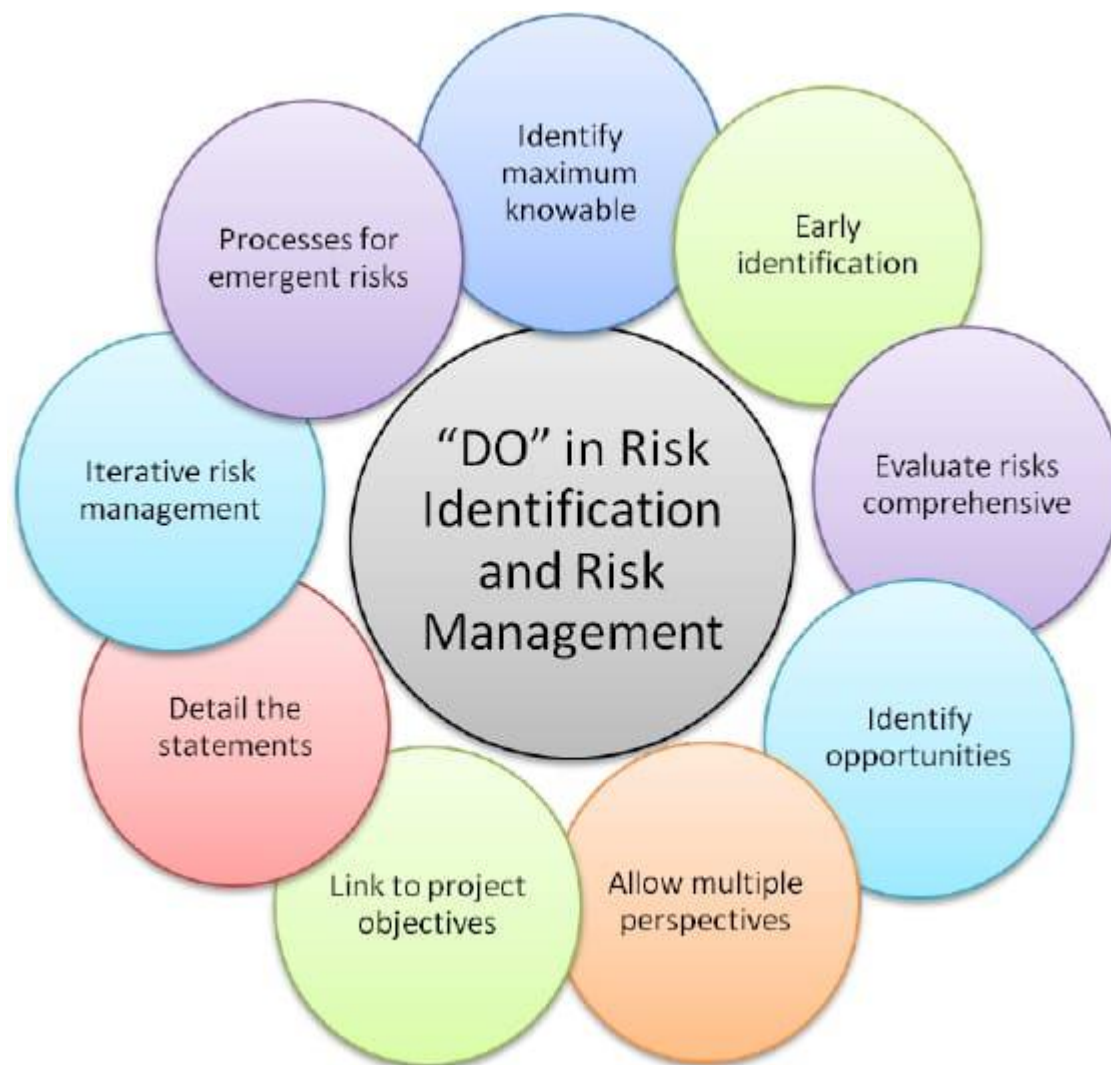
In this research we will identify and analyze the risks in the project of restoration the Refinery Of Abqaiq plant refinery, which was attacked by the terrorist attack by the end of 2019, which led to the failure of a complete unit to work and burn three columns to filter oil, and the role of our company in the project as a manufacturer factory was to assess the impact of each column and the extent of repair as well as the method of removing columns and transporting them to the factory for repair and return it to the plant within a month. Accordingly, a risk management plan has been made to ensure that the columns are delivered at the agreed time.

Literature Review:

Risk management is an integral part of the project, because projects always go along with various kind of risks. Risk identification step of the risk management plays an important role by determining which risks are likely affect the project and documenting the characteristics of each. (1)

Therefore, when all the risks expected to occur before the start of the project or during the project work are determined, it is easy for us to deal with the risks and make plans to reduce them or to avoid them or to prevent them from occurring and therefore this will benefit the project and deliver it on time and within the agreed budget and compatible to the specifications and standards required by the client.

Figure below will illustrate the steps of risk identification and risk management (2):



Methodology:

As soon as we were awarded the project of restoring the three columns, we conducted an external Kik-off meeting that included all parties participating in the project. through the agreement to visit the site and perform a risk assessment under the supervision of the HSE Department of Saudi Aramco. During visited the site we identified all risks and the likelihood of their occurrence were determined as well as their impact if they occurred.

A table below shows all a list of risks identified:

No	What are the Risks?	What are we doing to control the risks?	Probability	Level of Risks	Impact	Remarks
1	Working at height	Ensure all the labor at the top of columns wear a harness.	50%	M	may suffer severe, possibly fatal, injuries if they fall from any height, during machinery or columns repair.	
2	Confined Space	Provides Oxyg and Ele Fan	70%	H	Lack of Oxy	
3	Exposure to gases &	Wear protective masks	30%	L	Causes asphyxiation	

	fumes from combustion				as well as skin symptoms	
4	Moving heavy objects (Columns)	All staff involved in moving heavy Columns to get together beforehand to agree how the job is to be done safely, and the transporter makes sure that everyone understands what they should and should not do	20%	L	The fall of the columns could cause further damage to the plant or people	
5	Machinery	Machinery guards inspected every day	70%	H	Labors may injury from unguarded moving parts	
6	Delay of spare parts materials	Air fright delivery mode , premium cost , delay follow up with suppliers	80%	H	Delays of schedule & additional cost up to 50% of budget	

Risk Matrix (3):

CONSEQUENCES							
PROBABILITY	Score		Insignificant NC Resolved in Day to Day Operations	Minor Delays up to 20% of Schedule. Additional Cost up to 20% budget	Moderate Delays up to 30% of Schedule. Additional Cost up to 30% budget	Major Delays up to 40% of Schedule. Additional Cost up to 40% budget	Extremely Major Delays > 50% of Schedule. Additional Cost > 50% budget
			10	20	30	40	50
	5	Certain >80% Chance					
	4	Likely 50%-80% Chance					
	3	Moderate 20%-50% Chance					
	2	Unlikely 5%-20% Chance					
	1	Rare <5% Chance					

EMV:

No of Risks	P	I	EMV
1	50%	4000	2000
2	70%	4000	2000
3	30%	4000	2000
4	20%	150000	30000
5	70%	4000	2000
6	80%	100000	80000

Results and Discussion:

We are going to use quantitative risk analysis technique since it relies on specific numbers and quantities to perform the calculations.

When EMV technique is used for risks, a contingency budget can then be estimated to cover the impact on the project,

With reference to the above table the risk contingency is calculated by multiplying the probability by the impact, So the total of EMV = 118,000 sr. (4)

References:

- 1- S.L. Peeger, Risky Business: what we have yet to learn about risk management, Murat Kaymak.
- 2- Dan Benta, Best Practices for Risk Management in complex Project, Jan 2011.
- 3- Risk Matrix prepared by QC/QA Department from Zamil Steel.
- 4- Fundamentals of Risk Management, Paul Hopkin (Lecture 8).