



جامعة الجميع الذكية  
EVERYONE'S SMART UNIVERSITY

## Everyone's Smart University

### Project (Spring 2021)

|              |                           |               |
|--------------|---------------------------|---------------|
| Student Name | Sultan Alaswad Alshammari | اسم الطالب    |
| Students I.D | 2021201382                | الرقم الجامعي |

Section

Master

Date

Thursday

01 / 05 / 2021.

Course Code

(PMG510)

## Project Risk 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 الإنجليزية.
- 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. Mosaab M. Hamed

## **Business Continuity Management in Saudi Electricity Company**

### **1. Introduction**

This research aims to provide an introduction about the project of Business Continuity Management in Saudi Electricity Company that held in 2020 during the Covid-19 Pandemic. Then, it illustrates the different aspects of the project. Later, it shows the elements that formed the main process of the project. After that, it reflects the results and outcomes during the execution stage. Finally, it discusses the recommendations and internal discussion outputs.

BCM project main objective is to make sure work does not stop due to external forces that have no control on. It provides well-organized plans and strategies to emphasized on that, the work does not interrupt in any circumstances. My role in the project was the project manager's assistance. I was second person in project management roles. COVID-19 pandemic was one of the risks that this project aims to provide common plans to keep continues running of the works. However, it is not exclusive to this type of risks. It includes even environmental threats. The current phase of writing this project is within final stage of reviewing the results of the drills conducted for the proposed strategies. However, I have chosen in this research to write about identifying and describing the purpose, scope, and objectives of this project. The reason and purpose of that because I was a main participant of this part and provided many inputs within this point/stage.

### **2. Literature Review**

Business continuity management project was an absolute priority to Saudi Electricity Company due to its critical role for the nation. SEC signed a contract with the best company in its field. The company has developed a strategic and successful plan to several customers. Some of these customers were main cases used to be a base starting

point such as a Dubai Electricity & Water Authority and Kuwait government entities. The contractor showed a great result of the output for the BCM project done on these customers. For example, Kuwait government entities have avoided a serious issue due to cyber-attacks on its entities. Kuwait relies primary on oil as a source of economic income. That mean any attack on the ministry of oil may result in a full stop to the state's economy. So, it requires protection from any exposure to cyber-attack. Since the state of Kuwait relies on E-government, this means that all Kuwait government entities need protection not only the ministry of oil. The results of the strategies have been provided showed a real effect and functionality of the quality of business continuity management and importance.

### 3. Methodology

The methodology of this risk project will be implemented thorough an 8R and 4Ts process. The good connection between this process and the title of this project is that "The 8 Rs were created by the company Lootok, a business continuity consultant. They are the 8 Rs of resiliency, a way to organizing thinking about potential crises that might disrupt normal business operations. This process will help in identifying the probabilities and impacts of the risks for this project. A method could be using like brainstorming to identify all possible and known risks:

| Sr. No. | Lists of Risks                                                          |
|---------|-------------------------------------------------------------------------|
| 1       | Collapse of high voltage transmission lines                             |
| 2       | Failure of generation unit                                              |
| 3       | Loss of protection control system                                       |
| 4       | Failure of backup generator                                             |
| 5       | Deficiency in major spare parts                                         |
| 6       | Failure of materials delivery and supply chain due to Covid-19 pandemic |
| 7       | Loss of IT infrastructure applications                                  |
| 8       | Cybersecurity attacks                                                   |

Table.1: List of Risks

Risks Matrix: (Identifying probability & Impact)

(Low=0 to 0.30, Medium =0.31 to 0.70, High=0.71 to 1.0)

| Sr. No. | Risks                                                                   | Probability | Impact |
|---------|-------------------------------------------------------------------------|-------------|--------|
| 1       | Collapse of high voltage transmission lines                             | 0.3         | 0.6    |
| 2       | Failure of generation unit                                              | 0.1         | 0.9    |
| 3       | Loss of protection control system                                       | 0.2         | 0.5    |
| 4       | Failure of backup generator                                             | 0.75        | 0.8    |
| 5       | Deficiency in major spare parts                                         | 0.2         | 0.1    |
| 6       | Failure of materials delivery and supply chain due to Covid-19 pandemic | 0.2         | 0.1    |
| 7       | Loss of IT infrastructure applications                                  | 0.1         | 0.8    |
| 8       | Cybersecurity attacks                                                   | 0.6         | 0.9    |

Table.2: Risks Matrix

|             | Impact      |             |             |            |
|-------------|-------------|-------------|-------------|------------|
| Probability |             | 0.71 – 1.00 | 0.31 – 0.70 | 0.0 - 0.30 |
|             | 0.71 – 1.00 | Very High   | High        | Medium     |
|             | 0.31 – 0.70 | High        | Medium      | Low        |
|             | 0.0 - 0.30  | Medium      | Low         | Very Low   |

Table.3: Severity

| Sr. No | Risks                                                                   | Probability | Impact | Severity  | Response Plan                                           | Mitigate Actions                              |
|--------|-------------------------------------------------------------------------|-------------|--------|-----------|---------------------------------------------------------|-----------------------------------------------|
| 1      | Collapse of high voltage transmission lines                             | 0.3         | 0.6    | Low       | Prepare a spare transmission lines along with equipment | Transfer the load through another circuit     |
| 2      | Failure of generation unit                                              | 0.1         | 0.9    | Medium    | Use Independent power plants IPPs                       | Use Load Shedding Plan                        |
| 3      | Loss of protection control system                                       | 0.2         | 0.5    | Low       | Make sure 2 sets of protection available                | Use manual resources                          |
| 4      | Failure of backup generator                                             | 0.75        | 0.8    | Very High | Prepare a battery bank                                  | Run on old generator with minimum requirement |
| 5      | Deficiency in major spare parts                                         | 0.2         | 0.1    | Very Low  | Provide minimum required spare parts                    | Use "used parts" for temporary time           |
| 6      | Failure of materials delivery and supply chain due to Covid-19 pandemic | 0.2         | 0.1    | Very Low  | Use back-up plans                                       | No big impact for long term                   |
| 7      | Loss of IT infrastructure applications                                  | 0.1         | 0.8    | Medium    | Run back-up applications                                | Use local manual system                       |
| 8      | Cybersecurity attacks                                                   | 0.6         | 0.9    | High      | Defend attacks                                          | Disconnect internet usage                     |

Table.4: Response Plan

The activity criticality was sorted as follows:

| Activity criticality | Recovery Time Objective Timeline | Definition                                                                                       |
|----------------------|----------------------------------|--------------------------------------------------------------------------------------------------|
| Critical             | 0-48 hours                       | An activity which is expected to recover within 48 hours from the time of declaration disaster   |
| Essential            | 3 days – 7 days                  | An activity which is expected to recover within 3-7 days from the time of declaration disaster   |
| Important            | 8 days – 14 days                 | An activity which is expected to recover within 8-14 days from the time of declaration disaster  |
| Preferred            | 15 days – 30 days                | An activity which is expected to recover within 15-30 days from the time of declaration disaster |

Table.5: Activity Criticality

#### 4. Results

My role since I was assigned as an assistant to project manager had different tasks. It includes for example but not limited, on set up a plan for the project, assist in data collection, analyze risks, participate in setting-up a response plans, communications plan, managing the plan from deviation of the main targets and controlling the stakeholders. Now, EMV will be calculate I following table for approximate costs. The potential impact on the plan is 945,000 SAR while the contingency cost is around 272,000 SAR. All the impact costs and risk contingencies were proximate values and exact values were not mentioned due to confidentiality of the data.

| Sr. No. | Risks                                                                   | Probability | Impact Costs SAR | Risk Contingency |
|---------|-------------------------------------------------------------------------|-------------|------------------|------------------|
| 1       | Collapse of high voltage transmission lines                             | 0.3         | 500,000          | 150,000          |
| 2       | Failure of generation unit                                              | 0.1         | 200,000          | 20,000           |
| 3       | Loss of protection control system                                       | 0.2         | 5,000            | 1000             |
| 4       | Failure of backup generator                                             | 0.75        | 100,000          | 75,000           |
| 5       | Deficiency in major spare parts                                         | 0.2         | 10,000           | 2,000            |
| 6       | Failure of materials delivery and supply chain due to Covid-19 pandemic | 0.2         | 10,000           | 2,000            |
| 7       | Loss of IT infrastructure applications                                  | 0.1         | 100,000          | 10,000           |
| 8       | Cybersecurity attacks                                                   | 0.6         | 20,000           | 12,000           |
|         | <b>Total</b>                                                            |             | <b>945,000</b>   | <b>272,000</b>   |

Table.6: EMV Calculations

## 5. Discussion

The BCM established and engaged SEC teams with each other which help for better understanding of the importance on business links. It discovered SEC crisis organization and operation model. Moreover, as shown above in all tables what type risks and their probabilities could affect the organization. Also, the response plans were mentioned with their impact costs and risk contingency costs.

## 6. References

- Fundamentals of Risk Management, 5<sup>th</sup> edition by Paul Hopkin.
- International Journal on Emerging Technologies 10(1a): Business Continuity Management and Crisis Leadership: An Approach to ReEngineer Crisis Performance within Abu Dhabi Governmental Entities.
- <https://www.power-technology.com/comment/saudi-electricity-company-business-continuity-plans-covid-19/>
- Information Security Journal: A Global Perspective, Volume 19, 2010 - Issue 1