



جامعة الجميع الذكية
EVERYONE'S SMART UNIVERSITY

Everyone's Smart University

Project (Spring 2021)

Student Name	Mohammed Alzaid	اسم الطالب
Students I.D	2021200996	الرقم الجامعي

Section

Master

Date

Thursday

18 / 03 / 2021.

Course Code

(PMG506)

Advanced project Management

Instructions:

- آخر موعد للتسليم هو يوم الخميس 2021-05-08 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 line spacing 1.5
- عدد صفحات البحث (لا يقل عن ثلاث صفحات ولا يزيد عن ست صفحات).

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

IDENTIFYING PROJECT MILESTONES AND ACTIVITIES FOR REPLACING OLD DISTRIBUTION TRANSFORMERS IN DALLAH HOSPITAL ORGANIZATION

1. INTRODUCTION

Distribution transformers considered as the main components that providing power for utilities. Replacing old transformers for existing hospital that contains operation rooms, coronary care units and catheterization procedures which operates at full capacity will not be an easy job. The demand loads from old transformers must be calculated precisely in order to supply power from alternative power supply without fail. The new transformers loss of life also must be taken into consideration and determined by measuring and estimating the daily load profiles [1]. Planning for this kind of risky job must be by using a project management tool such as creating Work Breakdown Structure (WBS), which is one of scope management tools and techniques in project management that considered as a key to accurate planning [2]. As A. Shimoda & P. Wilairath (2019) reveal that creating WBS will prevent a large loss of scope. WBS is a method of dividing the project work into small units and manage it in a hierarchical structure [2]. In this paper, WBS tool will be implemented for replacing old transformer project in order to have accurate planning which effect on the project success.

2. LITERATURE REVIEW

Nouban F., Sadeghi K. & Abazid M. (2016) studied “an overall guidance and proposition of a WBS template for construction planning of the template (jacket) platforms”. They proposed a detailed WBS template by combining the WBS in the literature review and the experiences from the execution of some template platforms for the construction of offshore structure. The proposed template is used for the planning phase and detailed design phase. It is useful for the client, consultant & contractor. The study also mentioned that the main advantage of the template (jacket) platform is its stability [3]. Another study was done by A. Sharon and D. Dori (2015) discussed how to manage the complexity in

projects by using project management tools. The complexity on projects depends on the complexity of the organization and the relation between its parties [4]. The research focus on implementing the WBS by using planning method. The reflection of the total scope of work involved in the project supposed to be by using the WBS. A. Sharon and D. Dori (2015) suggested to improve the classical WBS model to become more beneficial to the project planning phase for complex projects. The WBS model-based counterpart is proposed including its advantages with respect to the classical WBS.

3. METHODOLOGY

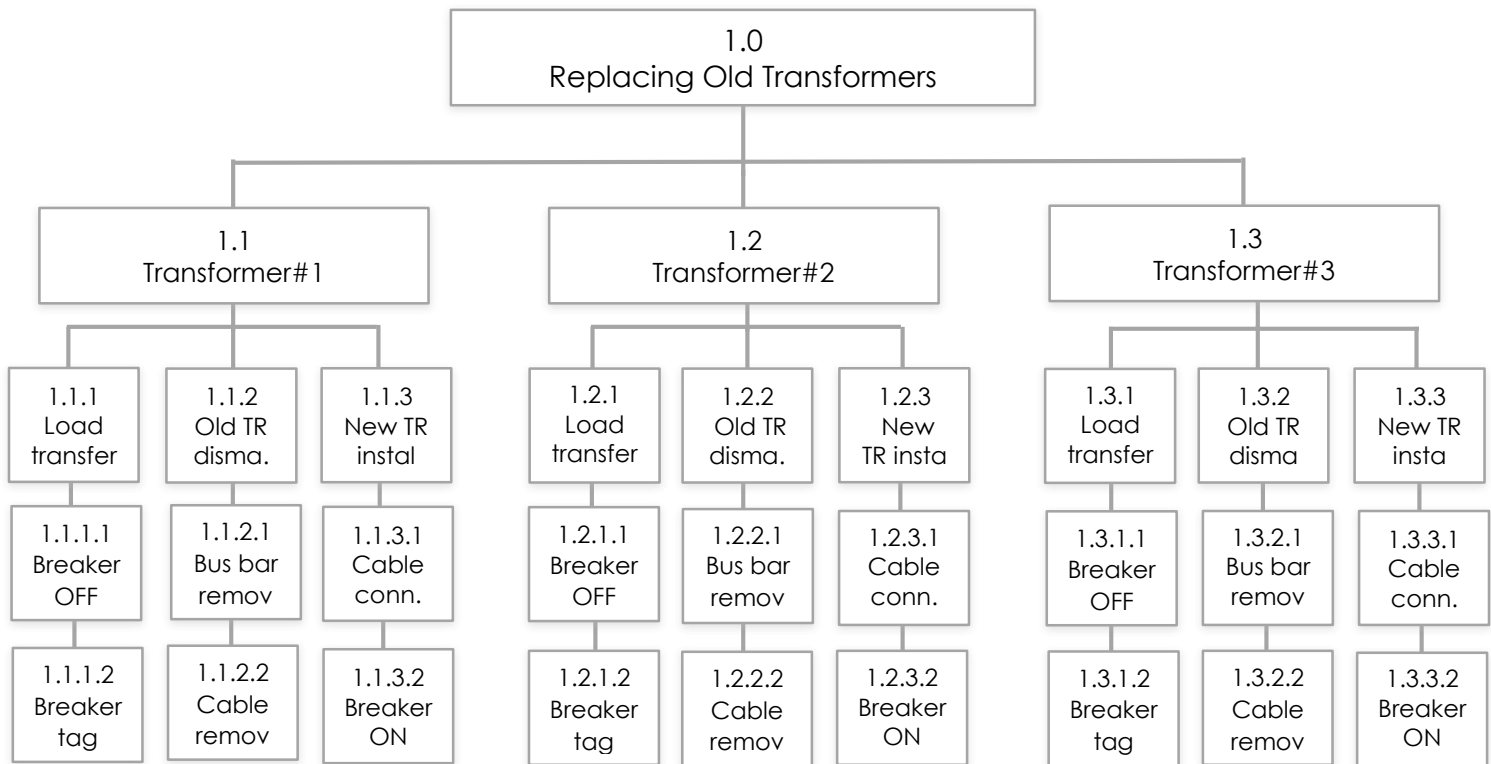
This paper derived information from related sources such as journals, books, published conference papers and theses that has relationship with the objectives of the study. Reference to above mentioned that replacing old transformers project is based on the usage of WBS tool. As shown in below table#1, there are three transformers with different connected loads (Electrical & Mechanical Loads).

Table#1: Transformer connected loads

Transformer Number	Connected Loads
TR#1	Mechanical Loads (Chillers, AHUs & FCUs)
TR#2	Electrical Loads (MDBs, SMDBs, EMDBs & DPs)
TR#3	Electrical Loads (MDBs, SMDBs, EMDBs & DPs)

The aim is to implement the WBS tool as shown in below figure#1 in order to stay focused on what you need to accomplish, technical performance and avoid any power interruption.

Figure#1: Work breakdown structure



4. RESULTS AND DISCUSSION

Reference to the above mentioned WBS figure#1, it consists of project name (1.0), major milestones (1.1, 1.2 & 1.3), sup-milestones (1.1.1, 1.1.2, 1.1.3 etc.) and work packages (1.1.1.1, 1.1.1.2 etc.). The sup-milestones and work packages are typically similar on the three major milestones. Works are divided into smaller activities in order to make it easy to accomplish the assigned project without fail. During the execution phase, work should be done as per the activities planned in order to not miss or prevent loss of scope. The activities are very clear in the WBS and should be executed in order. For example, the activity 1.1.1.2 cannot be done prior the activity 1.1.1.1 and so on. Another example is that whence the activity 1.1.3.2 is done successfully, the new transformer#1 will be on operation mood, then the activity 1.2.1 will start on the transformer#2.

5. CONCLUSION

In conclusion, the WBS tool which contains of milestones and activities is implemented for replacing old transformer project in order to have accurate planning which effect positively on the project success. The result shows that using this tool which divided works into smaller activities is significant to accomplish the assigned project without fail. The activities must be completed in order as planned which will minimize the probability of down time or failure.

6. REFERENCES

- [1] J. A. Jardini, H. P. Schmidt, C. M. V. Tahan, C. C. B. De Oliveira and S. U. Ahn, "Distribution transformer loss of life evaluation: a novel approach based on daily load profiles," in *IEEE Transactions on Power Delivery*, vol. 15, no. 1, pp. 361-366, Jan. 2000, doi: 10.1109/61.847274.
- [2] A. Shimoda, P. Wilairath and T. Kounosu, "Project Planning from the Viewpoint of Project Management and Systems Engineering," 2019 IEEE International Conference on Engineering, Technology and Education (TALE), Yogyakarta, Indonesia, 2019, pp. 1-8, doi: 10.1109/TALE48000.2019.9226007
- [3] Nouban F., Sadeghi K. & Abazid M. " An overall guidance and proposition of a WBS template for construction planning of Harbors" Academic Research International· June 2016
- [4] A. Sharon and D. Dori, "A Project–Product Model–Based Approach to Planning Work Breakdown Structures of Complex System Projects," in *IEEE Systems Journal*, vol. 9, no. 2, pp. 366-376, June 2015, doi: 10.1109/JSYST.2013.2297491.v
- [5] Barnes, P R, Van Dyke, J W, McConnell, B W, Cohn, S M, and Purucker, S L. The feasibility of replacing or upgrading utility distribution transformers during routine maintenance. United States: N. p., 1995. Web. doi:10.2172/82474