



Everyone's Smart University

Project (Spring 2021)

Student Name	عبدالرحمن بن موسى ناصر قرامش	اسم الطالب
Students I.D	2021202335	الرقم الجامعي

Define and Describe the Purpose, Scope, and Goals of The Project

1. Introduction- :

The saline water desalination corporation allocation model that includes separating transport assets and transferring them to a government company operating on a commercial basis so that it provides transportation services, water technologies and other related services, allocating production assets after completing the studies related to the assets from the technical, financial, legal, organizational, economic and social aspects and so on. It serves the development of the water sector, the details of the necessary requirements and the magnitude of the expected government commitments for private sector participation options.

1.1 Job description of the project student- :

Field Project Manager and Occupational Safety Officer.

1.2 Defining the project- :

It is the establishment of flow measurement systems between the dual transmission and distribution systems in the southern region.

1.3 Beginning of the project:

October 25, 2020 and ends on October 25, 2021 with permission to give a 6-month extension in the event that international flights are still closed.

1.4 Description of the project- :

It is the installation of valves that are compatible with digital flow meters devices to show data and details of the error rate less than 0.8%.

1.5 Purpose of the project- :

Invoicing between the National Water Company and the Public Water Desalination Corporation (NWC & SWCC) to balance the seized quantity and the returned quantity and invoice the financial amounts to ensure the safety of human errors in measuring the quantities.

1.6 The scope of the project is in the first and second stages only- :

- The First stage is the selection of isolation valves, valve rooms and water tanks, as the minimum age of 35 years.
- The Second stage is the selection of isolation valves, valve rooms and water tanks from the new transmission lines as the minimum age of 8 years.
- The Third stage is the selection of isolation valves, valve rooms and water tanks from the new transmission lines as the minimum life (under construction and not included in the scope of the project)
- The Fourth stage is the selection of isolation valves, valve rooms and water tanks from the new transmission lines as a minimum life (a large part is under construction and a small part is under study for expansion and is not included in the scope of the project).

1.7 Objectives of the project- :

1.7.1 General objectives:

- A-** Improving customer service and quality at the lowest possible costs
- B -** Attracting investors and encouraging private sector participation
- C-** Reducing the financial burden on the state
- D-** Developing the sector, creating a competitive environment in it, and supporting the local content of water purification
- E -** Ease of implementation and selection of the most appropriate to reduce the time and effort required.

1.7.2 Goals for Flow measurement:

It is the determination of the amount of moving water. The flow can be measured in various ways.

Cubic meters of positive-displacement water are combined into a constant volume of water and then count the number of times the volume that fills the flow parameter. Other methods of measuring flux depend on the forces that result from the flowing current while it crosses a known tightness, to calculate indirect flux. The flow may be measured by measuring the velocity of the fluid in a known region.

Knowing the amount of water passing through a pipe, canal, or any other facility is one of the most important information that an engineer must know with regard to water projects in particular and projects related to fluids, such as oil and gas in general, whether it is in the

design or investment stage, as it is not possible to design a supply network Drinking or irrigation water without knowing how much water should be provided. It is not possible to design a line to transport water, oil or gas without knowing the amount of water, oil or gas to be passed. It is also not possible to distribute drinking and irrigation water to neighborhoods or fields in specific quantities without a tool or means to measure it.

A flow or drain meter is an instrument or instrument that enables the measurement of the amount of water passing during a unit of time through a given medium. The medium can be a tube, canal, river, drainage dam, or pump.

The principle of measuring the flow does not differ according to the change of the type of water (desalination of its sweeteners or streams of torrents to re-clean them and distill them to irrigate trees and public utilities, or the transfer of sea water to special channels when desalinating water), because most of the principles and methods of measurement introduce the effect of measuring the water or the passing liquid as a qualitative effect. [1]

1.8 Project stage now- :

The field implementation phase and the start of civil works (digging tanks - creating small rooms under the ground of certain areas - casting the floor and wall of rooms - waterproofing - showing and isolating pipes and installing new valves and devices).

2. Previous scientific studies- :

2.1 National Water Plan

During the past years, the Ministry has completed most of the detailed studies of the most important groundwater reservoirs in the Kingdom, and the current situation and the changes that have occurred in these components resulting from the depletion of water over the past years have been assessed and studied. Based on those studies, the Ministry completed the preparation of the National Water Strategy in cooperation with the World Bank. The Ministry has set sustainability as a major goal to be reached by reducing the pumping quantities of components in proportion to their natural ability to regenerate. This goal has been clearly defined, which is to convert the main pumping areas to be from renewable sources instead of non-renewable sources. Although this goal may seem at first glance extremely difficult, it is possible under the system of solutions that the ministry is working on, which includes completing its organizational structure, providing a favorable legislative environment, and integrating roles between the ministry and the consuming sectors.

2.2 Aquatic studies and research

Most of the detailed studies have been completed, some of which are in their final stages. The limited water resources in this dry part of the world is not the only challenge that the ministry faces. Industrial development, population growth and human activity give rise to many pollutants, especially in groundwater. Realizing the importance of taking a practical step in this direction, it has directed part of its studies to measure Natural pollution and pollution resulting from human activity.

2.3 Brothers water transmission systems

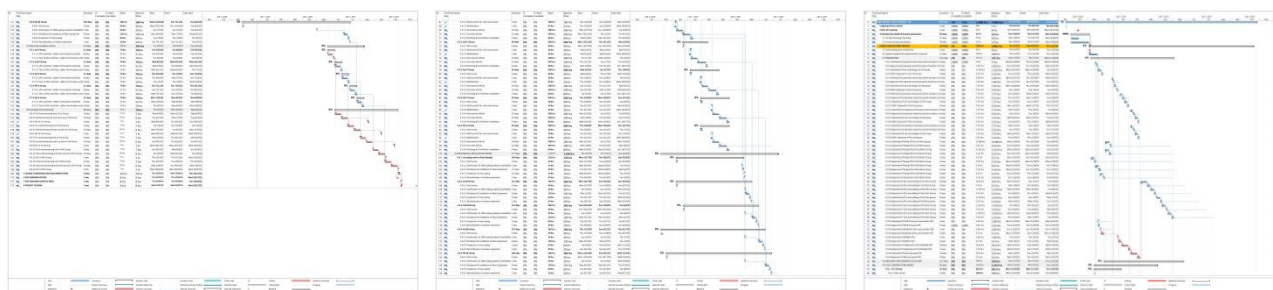
The completion of the extension works for the electrical interconnection lines (13.8 KV) between the first pumping station of the sister water transmission system, ABHA, the first phase, and the first pumping station of the ABHA system, the second phase, in order to increase the reliability of the systems. Completion of the cleaning works for the SAMTA line (line path - tanks - valve rooms) of length (230 km)

Completion of the works of replacing the floors of the electrical switch rooms for the brother ABHA water transmission system, the first stage. The completion of the study to upgrade the brother's water transport system, SAMTA [(JAZAN region), in preparation for pumping additional quantities (70 thousand) cubic meters per day. [2]

3. Research method: -

3.1 Gantt Char was used to illustrate all project milestones at all stages.

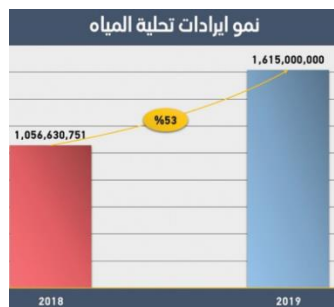
3.2 Gantt Char photos:-



4. Results and discussion: -

4.1 And because information technology is one of the most important tributaries that enhance the operational and financial efficiency of the corporation, a digital transformation project for SAP systems has been initiated to contribute to the calculation of the cost of producing and transporting water and producing electrical energy, and this in turn will contribute to determining the price of selling production of water and electricity on a commercial basis. It began to apply the quality principle in its work in order to achieve the highest efficiency and adopted the model of the European Foundation for Quality (EFQM), in which it aims to continuously improve and develop all its main business areas and support. In track and in compliance with international accounting policies, procedures and standards. [3]

4.2



5. References: -

[1] Amjad Zeno. Fluid Flow Meter. The Arabic Encyclopedia. Retrieved December 17, 2013.

[2] <https://www.swcc.gov.sa/Arabic/MediaCenter/SWCCPublications/PUBLICATION%20FILES/20180BDA6E2E-B563-40DE-AFA6-D74C3A18B11D.PDF>

[3] <https://www.alriyadh.com/1845795>