Design of onshore lng regasification plant = Design of onshore lng regasification plant

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Abstrak

With the growth of utilizing natural gas all over the world, Liquefied Natural Gas (LNG) has been widely used in the modern era due to its advantages of storage and transportation. When LNG is unloaded in import terminal, in the time of need, the process of returning natural gas into its gaseous form is being done in the regasification unit with different technologies in order to process the gas and then distribute it by pipeline networks to the end users. Choosing the appropriate LNG vaporizer which is both cost effective and suitable to conditions of the location and environment is intended to be evaluated.
The framework of this paper is studying of some of the different LNG vaporization methods and comparing their features and properties that each of them has. The goal of this paper is in the first step, comparison of technologies which are Open Rack Vaporizer (ORV), Shell and Tube Vaporizer (STV), and Intermediate Fluid Vaporizer (IFV) and defining the suitable vaporizer to do the simulation as the second step as well as evaluating the economical features of the project. While the Shell and Tube Vaporizer has been chosen, the regasification plant using three different heating medium, propane, steam, and 50/50 mixture of water and glycol has been designed.
At the end, the economic evaluation has been done with total capital investment of 62 million dollars in the service life of 10 years. The NPV is calculated 11.33 million dollars and the salvage value is calculated to be 5.2 million dollars. Each heating medium is considered to be effective depending on the locations and conditions.