

ABSTRACT

The North Sumatra Offshore (NSO) area is located in the Malacca Strait, Lhoksumawe, Aceh with a working area of 3,633 square kilometers and has 1 (one) offshore platform that will reach the end of the contract in 2038. As stipulated in the Work Procedure Guideline (PTK) Revision-1 number 040/PTK/SKKMA0000/2018/S0 issued by the Satuan Kerja Khusus Minyak dan Gas Bumi (SKK MIGAS), the cooperation contractor is required to carry out Abandonment and Site Restoration (ASR), so it is necessary to analyze the work and calculate the cost estimate.

Decommissioning work analysis and cost estimation calculations are carried out by inventorying platform asset data to be dismantled and determining the timing of the dismantling work. Several decommissioning method options that can be carried out in the NSO working area are Total Removal For Onshore Disposal where the platform is completely dismantled and transported to storage, or Rig-to-Reef Partial Removal and Rig-to-Reef Topple in Place where part of the platform jacket is reused for artificial reefs. The results of the cost estimation analysis will be considered in the selection of decommissioning methods in the NSO working area.

The results of the calculation of the total cost of ASR with the three dismantling methods, in terms of cost, the method of decommissioning the platform at NSO-A offshore which is considered effective and economical is the Rig-to-reef Topple in Place method, where the jacket part of the platform is not dismantled as a whole, only positioned horizontally at the location of the platform. The cost estimation calculation carried out in 2024 resulted in a cost of US\$ 8,801,404.59. If the cost calculation is escalated to the year of contract expiration and the year of ASR implementation, which is in 2038 with an inflation rate of 2.5% per year, the estimated cost is US\$ 12,436,154.28.

Keywords: abandonment and site restoration (ASR), cost estimation, platform, total removal, rig-to-reef,