CEST02_070

Flow Assurance in Oil Pipelines of Libyan Fields Using Computer Software OLGA

Mohammed Bin Zayd1 *, Muhanad Ayad1, Hasan Alsharif1
Department of Chemical Engineering, Faculty of Engineering, Zawia University, Libya
mohmdbin74@gmail.com

ABSTRACT

Flow assurance deals with problems such as hydrate, wax, asphaltenes, corrosion, erosion, scale, and problems attached with increased, decreased flow. The solution for these problems prevents flow blockage and production stop. The aim of this study is to present different flow assurance problems. The selected study cases include some main Libyan oil pipelines. One of these pipelines is the 42 inch, 212 km, multi batch pipeline connecting Intisar oil field to Zwitena terminal and this pipeline is equipped with a heater at 108 km. The second case study deals with a six inch, 20 km trunk line connecting two oil fields in the Libyan Desert. In these study cases, the (OLGA 7.0) software was used to simulate all these pipelines. Calculations include pressure and temperature profiles during steady and unsteady state operations. For the 42 inch, multi batch pipeline, the minimum oil flow rate that allows oil temperature to be always above oil pour point until delivered to Zwitena terminal was determined for Abu-Attifel oil batch and Zwitena oil batch. In addition, for the six inch pipeline, the maximum live oil flow rate that can be delivered from OO-field to Rimal field when the processing unit at OO-field is not working was determined and compared it with the oil flow rate if the processing unit is working. These results demonstrate how computer software is useful for operators to avoid operating problems.

Keywords: Flow Assurance, Oil Pipelines, OLGA Simulator.