Marinyuk Boris et al., Int J Petrochem Res. 2018
http://dx.doi.org/10.18689/2638-1974.a2.005

madridge CONFERENCES

2nd International
Oil and Gas Conference

December 3-5, 2018 Dubai, UAE

Low Temperature Engineering in Creating Column Supports for Sea Shell of Oil Platforms and Protecting Sea Aqua Media

Marinyuk Boris* and **Ugolnikova Maria**
Moscow Polytechnic University, Russia

Raw oil often obtained on the sea shelf platforms. They are a great and expensive edifices, which take a great span of time to set them up and dismantle when the operating period is over. When in operation and digging out raw oil on sea shelf one can't exclude oil leakage which may cause pollution of sea environment. Both this problems can be solved with the help of low temperature engineering. Water is a good and natural friendly substance. When it is freeze down to ice slab, one get quite a solid and durable material like a concrete if it is kept at low temperatures. Generation of low temperatures on the platform is easy made think even without electric energy supply. So the procedure of ice formation inside a vertical tube which is used as a column support of the sea platform is discussed. This low temperature method may substantially diminish the time of the platform creation by 2-3 times as well as reduce its expenses. Liquidation of water oil pollution at the platform in case of extremely situation arise also can be implemented with the help of applying low temperatures. Water oil mixture is freeze down into ice covering oil leakage location and preclude it within a short period of time scientific problem of this is heat transfer process with a moving border between water and its ice. The task is hard for analyses with math instruments. Fourier equation for ice covering the wall being at a low temperature and immersed in to aqua media was solved for constant heat conductivity of ice and with a temperature dependence of it.

Biography:

Marinyuk Boris is a professor of the Department of low temperature engineering named by P.L. Kapitsa, Moscow Polytechnic University, Russia. The special interests are: ice, frost formations on a low temperature surfaces, approximate analytical approach for solving Fourier equation with moveable boundary of phase change.