CERTIFICATION OF APPROVAL

AN EXPERIMENTAL STUDY ON THE WAVE INDUCED INSTABILITY OF PIPELINES: THE BREAKOUT OF PIPELINES

by

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Approved by,

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CERTIFICATION OF ORIGINALITY

This is to certify that I am responsible for the work submitted in this project, that the original work is my own except as specified in the references and acknowledgements, and that the original work contained herein have not been undertaken or done by unspecified sources or persons.

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ABSTRACT

In this paper, a series of experiments have been conducted in a wave flume flow tunnel, which provides a more realistic simulation than the previous actuator loading methods. This experiment is carried out to investigate the lateral movement of underwater pipeline in laboratory. The breakout of pipeline from its original place is investigated under wave loading using wave flume generator in laboratory. The interaction between wave-pipe-seabed causes the pipeline to breakout from its places. Based on the experimental data of pipe displacement with two different constraint conditions (freely laid pipelines and anti-rolling pipelines), three characteristic times in the process of pipeline losing stability are identified. The effects of wave frequency on the pipeline lateral stability are also examined for freely laid pipelines and anti-rolling pipelines.

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