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COMPREHENSIVE STUDY OF PIPE-RACK DISPLACEMENTS ON BREAKWATER CRESTS AT PARS PETROCHEMICAL PORT

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INTRODUCTION

The Pars Petrochemical Port is the second largest exporter of petrochemicals in the Middle-East located at Assaluyeh region of the Bushehr province of Iran, with a capability of annually exporting up to 30 million tons of solid, liquid and cryogenic petrochemical cargo. In this port, two rubble mound breakwaters have been designed, in water depths exceeding 30 (m), not only to withstand waves impact and hydraulic related phenomena but also to facilitate the passage of pipelines carrying petrochemical cargo such as Propane, and Butane to the adjacent berths. As this port is located in the vicinity of active fault-lines, and the maximum permissible displacement for the pipelines was quite restricted, therefore, settlement studies of the breakwater structure not only as a means of harbor protection but also as an industrial structure was a significant aspect which required comprehensive pertinent considerations. Thus, this paper presents the results of the studies of the simulations performed for the pipelines substructure, particularly under severe seismic conditions.

Figure 1: Pipelines passageway on the western breakwater crust at Pars Petrochemical Port