

SUMMARY

ERFIEN PURWANTO. Efficiency Analysis of Queue Ships in Oil Terminal Makassar. Supervised by LUKY ADRIANTO and SRI RAHARDJO.

The role of sea transportation in the industrial sector in Indonesia is very important, given by the geographical coverage of Indonesia, which is ocean broader than its land. Discussing about sea transportation, it can not be separated from the discussion of the important elements, i.e. ports, where the port has an important role in maritime logistics.

The purpose of this research is reducing the risk of queues as well as economic consequences, especially for terminal management. Based on simulations run using software Arena 14.0 representing dynamics in TBBM Makassar obtained that the existing condition of BOR at *jetty* I calculation is 72% and *jetty* II is 77%, with demurrage per year is US\$ 5,740,866.00, of which these conditions have exceeded the limits of the ideal conditions.

From the analysis of simulation optimum scenarios concluded that the second scenario provides optimum results that can suppress conditions of BOR at *jetty* calculation is 51% and *jetty* II is 62%, and can minimize the total of demurrage to US\$ 2,311,669.00 or a decrease of 59.7% from initial conditions.

Keyword : berthing occupancy ratio, demurrage, discrete-event simulation, efficiency, port simulation

