# *ABSTRACT*

RK Charitas Hospital Palembang every day produces wastewater containing pollutants that are toxic, infectious, radioactive and even potentially have an impact on environmental pollution and public health. RK Charitas Hospital had Wastewater Treatment Plant (WWTP) with a long process, but the levels of ammonia (NH3) and Phospat (PO4) issued still exceed the Liquid Waste Quality Standard (BMCL). Seeing these conditions, the authors want to redesign Wastewater Treatment Plant (WWTP) in RK Charitas Hospital with a review of the technical and economic aspects. The authors hope that the design of the new WWTP effluent then outputs the results to meet the standards of BMCL, especially for levels of ammonia and phosphate it. The design of the proposed WWTP relatively simple technical aspects from 13 to 6 the process. The order RK Charitas Hospital WWTP is currently there are 13 processes the primary tank (1), equaliasi tank (2), clarifier tank (3), buffer tank (4), biodetox (5), chlorination tank (6), polishing tank (7), sludge tank (8), tread water tank (9), carbon filter (10), the filter reasin (11), storage tank (12) and tube filter 2 (13). Using Engineering proposed WWTP order to process the primary tank 6 (1), equaliasi tank (2), biodetox (3), chlorination tank (4), filter tube (5), and the storage tank (6). From the economic aspect, the proposed WWTP is relatively more efficient than the current WWTP. Cost of electrical energy consumption occurs monthly savings of 5.62%, the cost of care occurs savings of 25% per month and the cost of chemical usage each month going savings of 61.1%. Redesign of the proposed WWTP highly compliant BMCL, which is pH 7.18 mg / l, BOD5 1.90 mg / l, COD 10 mg / l, NH3 0.01 mg / l, PO4 1.8 mg / l, TSS 19 , 7 mg / l . So should the RK Charitas Hospital can redesign the WWTP, at least adding zeolite in the filter so that the output of better quality and meet the BMCL.



Keywords: Value Engineering, BMCL, Technical Aspects, Economic Aspects, Redesign WWTP.