Keywords: pump, cavitation, recirculation

This paper presents the engineering design and theoretical fluid analysis of the condensate extraction pumps vibration problem in Garri 4 power plant in Khartoum North. Fluid analysis and problem tracing performed based on actual monitoring and centrifugal pumps governing laws. Abnormal noise and visual inspection of pumps internal parts indicate that cavitation is the main problem of pumps. The results show that the normal evaporation cavitation is so far not existed; the net positive suction head available is higher than net positive suction head required. Suction recirculation cavitation is the main problem of pumps, which is clearly observed in visual examination and confirmed by calculation.