ABSTRACT

PRESSURE DROP ANALYSIS AT ROLL STEAM TURBINE PIPING SYSTEM IN CANDI SIDOARJO SUGAR FACTORY

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Pipe pressure drop at plant can caused plant does not operate optimally and reduce work performance. Piping steam system at candi sudoarjo cane sugar factory had been operated approximatelly 25 years so it’s potential to meet pressure drop. To minimize pressure drop appropriate design must be fulfill. Hence pressure drop analysis on pipeline needs to be done.

Pressure drop can be caused by fluids friction through pipeline and inappropriate diameter selection. Fluid with high friction energy can caused considerable loss of energy. Potential pressure drop in this analysis is stated with $\Delta p$ which is pressure drop. This pressure drop analysis is done from steam header until turbine lead. Term of limits are obtained from literature and rules that’s commonly used in plant.

According to analysis result and literature shows that pipe length and relatively small diameter higher pressure drop is occurred. Pressure drop in steam header until turbine lead’s pipeline before optimizing is 1.3 kg/cm², and after optimizing is 1.13 kg/cm². Optimiltaion is shortened pipeline from 84.5 meter to 54.5 meter. Based on analysis result, 464.3 meter headloss was saved.

Keyword : pipe, pressure drop, turbine, headloss