Abstract

The use of electrical energy and heat energy continues to increase, so does its development, not only for the needs of the manufacturing process, but also to support operations. Particularly on palm oil mills are very easily found the energy that is not utilized and wasted. This energy can be used as optimal as possible by using some equipment. Organic Rankine Cycle used the optimization of existing energy on palm oil mills will reduce evaporation into the atmosphere and reduce air pollution atmosphere. Heat steam from the blow-down sterilizer never touches the turbine into organic rankine cycle. Heat steam from the blow-down sterilizer is used to heating refrigerant in heat exchanger. refrigerant will produce steam of flash. Steam produced in the heat exchanger was then transferred to rotate the turbine and then drive generators to produce electricity resources. Steam heat generated in the heat exchanger is called an working fluid. Organic Rankine Cycle power plant is actually a closed system. So nothing is released into the atmosphere.
Design done to get the Heat exchanger dimensions: length, number of tubes, number of phase, forms of composition, tube diameter, the diameter of the shell, by utilizing waste steam from blow-down sterilizer.

From this design dimensions obtained heat exchanger Type Shell and Tube Liquid Chiller corresponding to carrier product heat exchanger used in Geothermal Organic Rankine Cycle in Alaska.

Keywords: working fluid, organic rankine cycle, heat exchanger.