ABSTRACT

MED plant is a part of the power plant that serves to convert sea water into fresh water. The fresh water is used as the working fluid in the system plant. MED plant owned by PT PJB UBJ O & M Indramayu decreased production of fresh water from the power plant is run for the first time. The conditions at the time of commissioning in 2009 MED water production plant capable of up to 160 m3 / h, while the MED plant is currently only able to produce fresh water of 80 m3 / h. If that is allowed without any solution to it, does not rule out fresh water production will continue to decline. This will interrupt the cycle of the power plant itself. Therefore, it is very important to know the cause of the decrease in water production.

The decline in the production of fresh water can be caused by several things, one of which is a state level in each effect. In this study, the method used to predict the energy equilibrium state level and the production of fresh water on each effect. By comparing the data commissioning and current data it will get the state level corresponding to each effect and cause of the decrease in water production can be known.

The level of state raw water (seawater) greatly affect the percentage of the steam generated from any securities. This vapor will condensed into fresh water on the subsequent effects. Furthermore, it will change - change the state level that may occur on each effect, to get a percentage of the maximum steam.

In current conditions, the pressure of 24.3 kPa at 1 securities yield 10.07% fraction of steam, pressure of 21.3 kPa on the effects of 2 yields 10.55% fraction of steam, pressure of 18.9 kPa at 3 securities yield 10.98% fraction of steam, pressure 17 kPa at 4 securities yield 12.88% fraction of steam, pressure of 15.5 kPa at 5 resulted in 13.2% effect of vapor fraction, the pressure of 13.9 kPa on securities 13.56% 6 produce a vapor fraction, pressure 12.9 kPa at 7 securities yield 13.81% vapor fraction and a pressure of 10.8 kPa on securities 8 (Condenser) yield 0% vapor fraction. With a vapor fraction obtained at the current conditions, get the amount of fresh water amounted to 105.6 m3 / h.

At the current state of commissioning, pressure 14.31 kPa at 1 effect produces vapor fraction 11.95%, 13.93 kPa pressure on the effects of 2 yields 12.04% fraction of steam, pressure of 13.6 kPa at 3 securities yield 12.12% the vapor fraction, 13.24 kPa pressure on the effects of 4 produces the vapor fraction 13.72%, 12.82 kPa pressure on the 5 effects produce a vapor fraction 13.83%, 12.37 kPa pressure on the effect of 6 produces vapor fraction 13.94% , pressure of 11.91 kPa at 7 effects produce the vapor fraction 14.07% and 11.64 kPa pressure on securities 8 (Condenser) yield 0% vapor fraction. With a vapor fraction obtained at the current conditions, get the amount of fresh water amounted to 152.31 m3 / h. The data is closer to the actual data on the condition of commissioning.

There is a significant difference in pressure on each effect when commissioning and during the month of March. It is a major cause of decline in the production of fresh water on the MED Plant. The higher the vacuum pressure, the greater the freshwater produced.

Keywords: Power plant, MED Plant