Technical visit to TNB Janamanjung Sdn Bhd

by Dr Siow Chun Lim, Grad. IEM

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A technical visit to TNB Janamanjung Sdn Bhd was organized by IEM Electrical Engineering Technical Division on 8th August 2016. Participants departed from IEM at 6:30am and reached the destination at 10:30am. We were greeted by Mr. Mat Isa who then gave an overview presentation on the facts and figures of Janamanjung which is a coal-fired power plant. Known as the Stesen Janakuasa Sultan Azlan Shah, this coal-fired power plant is the first in ASEAN which employs the ultra-supercritical technology. In the first phase, three 700MW units (M1, M2 and M3) were built in the year 2003 with an average efficiency of 36%. The fourth unit which is 1000MW was built in the year 2015 and this unit is the one which employs the said ultra-supercritical technology. A supercritical steam generator is a type of boiler which runs at supercritical pressure. Running at an efficiency of 40%, this unit is the most efficient among the four units. Slightly less fuel is required to power up this technology rendering less greenhouse gas production .The difference between the fourth unit and the rest is that the former runs on a once through boiler with condensate polishing plant and there is only a single steam phase whereas the latter employs boiler drums with blowdown. This fourth unit also known as Manjung 4 (M4) is also employing clean coal combustion technology in its design with key processes such as pulverized fuel firing, flue gas desulphurization, electrostatic precipitator or fabric filter, usage of low Sulphur sub-bituminous grade coal, low NOx burners, and provision of high chimney as exhaust gas. M4 is one of the earliest 1000MW twin-fired fireball boilers by ALSTOM. Another unit M5 is expected to be completed in 2017. The figures below depict the entire visit. This visit concluded with presentation of a token of appreciation from IEM to Mr. Mat Isa.

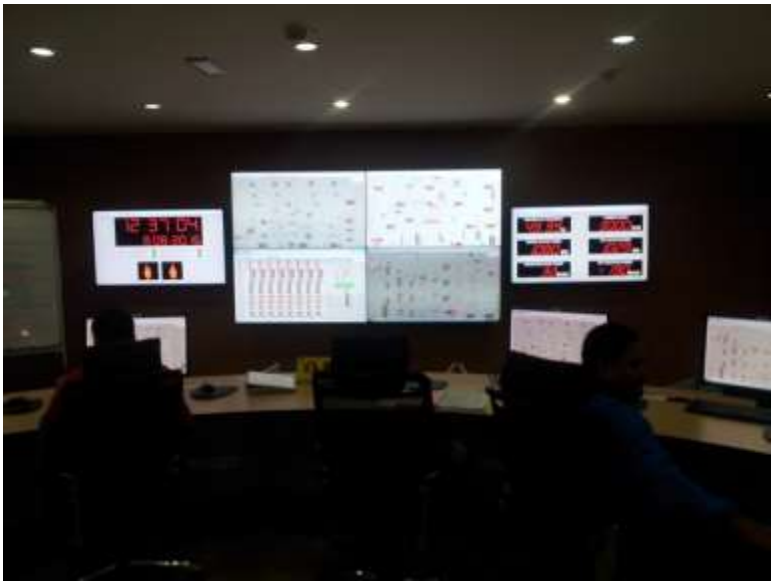

Figure 1: Simulator room to train the staff on monitory works

Figure 2: M1, M2 and M3

Figure 3: Once, the largest transformer in Peninsular Malaysia

Figure 4: The coal is sourced mainly from Indonesia

Figure 5: Group photo of all participants