Visit to the Distribution Automation (DA) Initiative under TNB Transformation Program

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The IEM Electronic Engineering Technical Division (eETD) visited the NERCC at Wisma TNB in Seberang Perai, Penang on 15th December 2023. It was joined by a group of 22 participants, in collaboration with IEM eETD/ MaTD/TAM and IET Malaysia.

The purpose of the visit is to gain valuable insights into the Distribution Automation (DA) system employed by TNB, particularly its utilisation of Supervisory and Data Acquisition (SCADA) Technology for remote monitoring and control of facilities at substations. We believe that such a visit will provide our members with a practical understanding of the innovative initiatives under TNB's Transformation Program, thereby enhancing the capabilities of engineers across the nation. This technical visit started with a welcoming presentation by Mr. Ranald, the Chief Engineer, share overview of TNB's Reimagining TNB transformation program; Distribution System Operation, safety briefing by Mr. Husaini and followed by technical overview of SCADA technology and its components by Ir. Muhammad, Zone-Head for Distribution Automation Project Northen area as in Figure 1 & 2. TNB has embarked on Supervisory Control and Data Acquisition (SCADA) projects at 11 kV distribution substations since 2006 for real-time monitoring and control of field equipment as part of its initiatives to improve availability and reliability of supply of distribution network. This is vital in fulfilling TNB's objective to enhance customer satisfaction by providing fast restoration of supply in the event of supply interruption.

Distribution Automation (DA) Project team was formed in 2014 to focus and accelerate the deployment of SCADA projects and intensify installations at 11 kV distribution network for the whole of Peninsular Malaysia. Distribution Automation (DA) is an initiative under TNB transformation program (Reimagining TNB) that uses Supervisory and data Acquisition(SCADA) Technology by Equip substations with remote monitoring/control facility whilst improving the network reliability and productivity.

The main objective of implementing DA Project is to provide fast restoration of supply to the customers, which aims to deliver exceptional customer's experience. With the use of SCADA technology at Control Centres and SCADA facilities at the substations, Control Centres are now able to obtain real-time data monitoring and control of network assets, and thus, enables quick identification of fault location and informed-decision to restore supply within short period of time. Distribution Automation (DA) integrates with field equipment technologies to enable remote

monitoring and control from Control Centre, thereby enabling network controllability and visibility that will improve supply reliability and facilitate energy transition toward sustainability energy resources.

This visit provided valuable insights into the implementation, operational mechanisms, and benefits of SCADA technology in enhancing the efficiency and reliability of the power distribution network. This visit included presentations by TNB's engineering team, live demonstrations of SCADA technology in action, and discussions on the transformation program's strategic objectives. The visit also highlighted SCADA's real-time capabilities, including continuous monitoring of substation parameters and remote execution of control operations.

Figure 1. Welcoming presentation by Mr. Ranald, the Chief Engineer, share overview of TNB's Reimagining TNB transformation program.

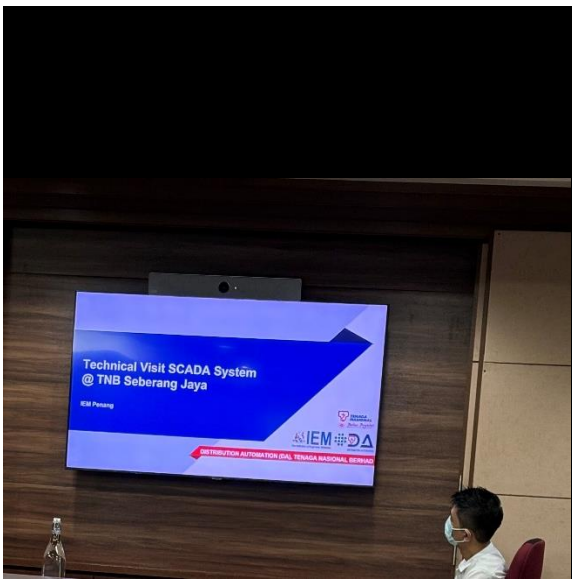

Figure 2. Technical overview of SCADA technology by Ir. Muhammad, Zone-Head for Distribution Automation Project Northern.

Figure 3. Presentation Distribution System Operation R2 by Mr. Ranald.

Figure 4. Ir. Muhammad explained about the flow of the supply power PE TNB Seberang Jaya.

Figure 5. Pictures visit inside the room PE TNB

Figure 6.Group Photo of participants in front of PE TNB

Figure 7. Token of Appreciation Presentation to Chief Engineer, Mr. Ranald.

Figure 8. Group photos of Participants