



TEXAS A&M UNIVERSITY

Department of Electrical
& Computer Engineering

Friday, Nov 5, 2021 | 12:00 – 12:20 p.m. Central

Meeting Location: ETB 1020

Distribution Automation System and Distribution Control Centers in KEPCO

Abstract

This talk gives an overview of the distribution automation system (DAS) and distribution control centers (DCCs) in KEPCO. The KEPCO Power system is configured with three parts: generation, transmission, and distribution. Generation consists of Nuclear (18%), Natural Gas (32%), Coal (28%), Renewables (15%), and others. Transmission line voltages are 765 kV, 345 kV, and 154 kV. The main distribution line voltage is 22.9 kV, and customer voltages are 220 V and 380 V.

Distribution lines suffer from a lot of faults such as from storms, heavy rain, and birds. When a fault occurs, the Distribution Control Center (DCC) can isolate the faulted section. This is the main function of Distribution Automation System (DAS). Operators can monitor and control the field machines in their office remotely. The DAS consists of switches, FRTUs (Feeder Remote Terminal Units), modems, and servers. The Distribution Control Center system consists of DLP (digital lighting processing), WI (weather information), NDIS (new distribution information system), EPS, tunnel, and SCADA. Operators in the DCC can get information from field devices and distribution lines and easily monitor and control switches quickly when a power fault occurs.

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Jungkyo Jung received the B.S. degree in electrical engineering from Hongik University, Seoul, Korea, in 2006. He has worked in distribution fields as a Senior Manager for KEPCO (Korea Power Electric Power Corporation) from 2006 to 2021. He is currently pursuing the M.S. degree in electrical and computer engineering with Texas A&M University, TX, USA. His research interests include integration of renewable energy in power system, design and optimization of distribution lines, and advanced distribution automation system.