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Mohammed Arif Abdul-Majeed

Research Engineer/ Assistant Professor

Interdisciplinary Research Center for Renewable Energy and Power Systems (IRC-REPS)
King Fahd University of Petroleum & Minerals, Saudi Arabia

Executive Summary

Power Systems engineer with more than 35 years of experience as a researcher, and team leader in the field of generation and transmission system planning, electric power system interconnection, production costing and economic analysis and energy storage studies. Has a strong background in:

- ✓ **Generation Planning:** Generation expansion basis includes; fuel types, prices, available generation types, and unit sizes, proposed units specifications, lifetime of units, and interconnection with neighboring networks.
- ✓ **Transmission Planning:** Transmission plan identifies the required expansion of the electric transmission system over the planning period to accommodate the power generation levels required to meet the demand.
- ✓ **Interconnection Studies:** The interconnection study review the generation expansion plans of the electric utilities to be interconnected and determine the transmission capacities that would be needed to link the two interconnecting system.

Education

- ❑ MS Electrical Engineering (KFUPM, 1985)
- ❑ BE Electrical Engineering (Nagpur University, 1980)

Distinguished Projects

- Continuous Interactive Power Factor Management between the Consumer and the Service Provider. Electricity Cogeneration Regulatory Authority (ECRA), 2018 – 2020.
- Selection of Optimal Transmission Voltage/Technology for the Saudi Arabian Transmission Grid Expansion: Feasibility of 765 kV Versus HVDC and 380 kV. Saudi Electricity Company (SEC), 2014 – 2017.
- Assessment of the Impacts of Steel Industrial Furnaces on SEC's Electrical Networks, Especially When Located Near Generating Stations; and, Practical and Cost-Effective Solutions to Mitigate These Impacts, Saudi Electricity Company (SEC), 2014 – 2015.
- Improving the Load Curve in Saudi Arabia by Building Pumped Storage Power Plant, Ministry of Water and Electricity, Ministry of Water and Electricity, Riyadh, 2012 – 2014.
- Captive Power Generation Policies and Potential, Saudi Electricity Company (SEC), 2009 – 2011.
- Development of Electricity Generation and Transmission Plan for KSA, Ministry of Water and Electricity, Ministry of Water and Electricity, Riyadh, 2006 – 2011.
- Effect of Harmonics resulting from the operation of SVCs and large capacitor banks on Power System and customers and their remedial measures. Saudi Electricity Company (SEC), 2007 – 2010.
- Updated Generation Planning for the Saudi Electricity Sector. Electricity Cogeneration Regulatory Authority (ECRA), 2004 – 2005.
- The Benefits of Interconnecting MYAS with SCECO West. Royal Commission for Jubail and Yanbu, 2001 – 2002.

Research Summary

- ➢ Number of Published Papers 35 (11 Journal, 24 Conference)
- ➢ Citations 117 (Scopus) 190 Google Scholar)
- ➢ H-Index 5 (Scopus) 4 (Google Scholar)

Award and Recognitions

- ✓ **Best Paper Award**, at the Saudi Arabia Smart Grid Conference (SASG 2017), Jeddah, December 12 – 14, 2017, awarded by Organization Committee for SASG 2017, for the paper entitled, Selection of Optimal Transmission Voltage Level/Technology for the Saudi Arabian Transmission Grid.
- ✓ **Best Research Project Award 2013-2014** awarded by King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia, for the project entitled, *Improving the Load Curve in Saudi Arabia by Building Pumped Storage Power Plants*.
- ✓ **Best Paper Award**, at the GCC-CIGRE Tenth Symposium, Jeddah, November 1999, awarded by GCC Regional Committee for High Voltage Electric System (GCC-CIGRE), Doha, Qatar, for the paper entitled, *Opportunities for Demand Side Management Programs in Saudi Arabia*.
- ✓ **Best-Applied Research for the Year 1993** awarded by GCC Regional Committee for High Voltage Electric System (GCC-CIGRE), Doha, Qatar, for the project entitled, *Soil Properties Affecting Ampacity of An Under Ground Power Cable*.
- ✓ **Best Research Project Award 1990-1991** awarded by King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia, for the project entitled, *High Voltage Insulator Performance in the Kingdom of Saudi Arabia*.

Skills and Expertise

- ➢ Analytical research skills and expertise on power system planning related issues, in particular electricity demand forecast, long-term generation and transmission expansion plans, and interconnection studies.
- ➢ Proficient to undertake literature research and review of power generating and transmission system as well as demand side systems pertinent literature
- ➢ Collection and analysis of data related to the electric utilities and industrial electrical systems energy, power and economic data.
- ➢ Preparation of technical reports and memorandum, working papers related to the conducted studies , and other technical information material