

PTI Consulting

Sami Abdulsalam

Senior Manager

EXHIBIT A
TO TESTIMONY OF S. Abdulsalam
EMP-119 Subs 0 and 1

Dec 10 2021



Career Highlights

Dr. Abdulsalam's 23 years of experience covers a wide range of power system planning, protection, operation, and electromagnetic transient simulation and mitigation. Dr. Abdulsalam's core technical expertise is in the fields of voltage stability, dynamic assessment, and power system load modeling and protection performance during disturbances. He has managed multi-billion dollar power system expansion plans in North America to enable load serving reliability, renewable integration, and economic, interjurisdictional tie-line development; he has led these projects from the planning stage, through the regulatory process, providing expert witness testimony, and into energization. Dr. Abdulsalam has also led more than 200 large industrial, renewable, and conventional generation interconnection projects. He has participated in several key protection assessment and coordination studies in North America and the Middle East. Dr. Abdulsalam has published numerous articles in refereed journals and conference proceedings and instructed many courses on power system dynamics, voltage stability, and power system analysis and protection. He is an active member of the IEEE, a reviewer for the IEEE Power & Energy Society, and past chair of the IEEE PES Northern Canada chapter.

Experience

Dr. Abdulsalam joined Siemens PTI in June 2020 as a Senior Manager responsible for power system analysis, transmission planning, and protection studies.

Before joining Siemens, Dr. Abdulsalam spent 13 years with the Alberta Electric System Operator (AESO) in Canada in successive leadership roles in AESO's transmission planning, operations planning, and interconnection planning areas. Most recently, he was responsible for short and long term (20 years) planning of the provincial transmission system.

Dr. Abdulsalam's technical experience also includes economic valuation assisted transmission planning for renewable integration and conventional generation replacement as well as battery

storage solutions for transmission reliability and ancillary services, including fast frequency response.

While with the AESO, Dr. Abdulsalam was a member of key industry and IEEE groups involved with the review and development of the WECC interconnection dynamic model and the development of load and renewable generation models and aggregation techniques. He also participated in the development activities of the dynamic modeling and validation work group in the WECC.

Early in his career, Dr. Abdulsalam gained research and teaching experience in academia as well as protection and instrumentation & control engineering expertise with the oil & gas and the utility industries.

Areas of Expertise

- Transmission Planning
- Power System Economic Planning and Valuation
- Power System Dynamics
- Power System Protection Performance
- Short Circuit Analysis
- Distributed Energy Resources
- Power System Transients and Mitigation
- Generation and Load Interconnection
- Grid Operation Planning and Scheduling
- Economic Valuation of Transmission Development
- Load Shedding and Remedial Action Schemes Design
- NERC TPL, PRC, and BAL Standards Compliance

Education

- PhD, University of Alberta, Edmonton, Alberta, Canada, 2007
- MS, University of El-Mansoura, Egypt, 2001
- BS, University of El-Mansoura, Egypt, 1997

Professional Memberships and Activities

- Active Member of the IEEE and its Power & Energy Society
- Reviewer for the IEEE PES
- Past Chair of the IEEE PES Northern Canada chapter, 2004 to 2008

Professional Certifications

- Registered Professional Engineer (P.Eng.) in Alberta, Canada

Languages

- English
- Arabic

Publications

- Technical Reports:
 1. "ISO/RTO DER Integration Survey and Recommendations," IRC Planning Committee, September 2019.
 2. "RECSI Western Region Study Report," Regional Electricity Cooperation and Strategic Infrastructure (RECSI), Natural Resources Canada, 2018.
 3. "Energy Corridors – An AESO Perspective," Edmonton Metropolitan Regional Board, January 2018.
 4. "Transmission System Planning and Renewable Integration," Canadian Energy Research Institute (CERI), CERI Canada Electricity Conference, 2017.
 5. "Composite Load Model for Dynamic Simulation," WECC, Model Validation Workgroup, 2012.
 6. "Determining Acceptable Synchronization Parameters for the Alberta Interconnected Electric Systems (AIES)," AESO, August 2008.
 7. "A New Technique for Mitigating Electrical Disturbances Caused by Energizing Generator Transformers," Alberta Energy Research Institute, Final Project Closing Technical Report, June 2005 (co-author: Wilsun Xu).
- Peer Reviewed Journal Publications:
 8. "Analytical Formula to Estimate the Maximum Inrush Current," *IEEE Transactions on Power Delivery*, vol. 23, no. 2, April 2008 (co-authors: Yunfei Wang and Wilsun Xu).
 9. "Sequential Phase Energization Technique for Capacitor Switching Transient Reduction," *IET – Generation, Transmission and Distribution*, vol.1, no. 4, pp. 596-602, July 2007 (co-author: Wilsun Xu).
 10. "A Sequential Phase Energization Method for Transformer Inrush Current Reduction – Transient Performance and Practical Considerations," *IEEE Transactions on Power Delivery*, vol.22, no. 1, pp. 208-216, January 2007 (co-author: Wilsun Xu).
 11. "Estimation of Transformer Saturation Characteristics from Inrush Current Waveforms," *IEEE Transactions on Power Delivery*, vol. 21, no. 1, pp. 170-177, January 2006 (co-authors: Wilsun Xu, W. A. Neves, and Xian Liu).
 12. "Modelling and Simulation of Three-Phase Transformers for Inrush Current Studies," *IEE Proceedings – Generation, Transmission and Distribution*, vol. 152, no. 3, pp. 328-333, May 2005 (co-authors: Wilsun Xu and V. Dinavahi).
 13. "A Sequential Phase Energization Method for Transformer Inrush Current Reduction, Part II: Theoretical Analysis and Design Guide," *IEEE Transactions on Power Delivery*, vol. 20, no. 2, pp. 950-957, April 2005 (co-authors: Wilsun Xu, Y. Cui, and X. Liu).

14. "A Sequential Phase Energization Method for Transformer Inrush Current Reduction, Part I: Simulation and Experimental Results," *IEEE Transactions on Power Delivery*, vol. 20, no. 2, pp. 943-949, April 2005 (co-authors: Y. Cui, S. Chen, and Wilsun Xu).
- Key International Conference Proceedings:
 15. "Impact of Current Transformer Saturation on Fault Protection and Power System Stability," in *Proc. of 2014 IEEE Electrical Power and Energy Conference EPEC '14*, Edmonton, AB, Canada, November 2014 (co-authors: Hamed Golestanifar and Ron Stream).
 16. "Limiting Capacitor Switching Transients Using Sequential Phase Energization," in *Proc. of International Conference on Harmonics and Quality of Power ICHQP 2006*, Cascais, Portugal, October 2006 (co-author: Wilsun Xu).
 17. "Analytical Study of Transformer Inrush Current Transients and its Application," in *Proc. of the Seventh International Conference on Power System Transients*, Montreal, QC, Canada, paper no. IPST05-140, June 2005 (co-author: Wilsun Xu).

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