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R. A. El Shatshat

OBJECTIVE

Seeking a position using the full advantage of my background in power system operation and control, applications of numerical techniques in power systems, power quality improvement in distribution systems and my previous experience in designing and supervision of distribution systems.

EDUCATION

(09/1996-05/2000)

- **Ph. D. Candidate**
- Institution: University of Waterloo.
- Discipline: Electrical and Computer Engineering.
- Location: Waterloo, Ontario, Canada.

Research Focus: Power quality improvements in distribution systems. The research work involved developing a new active power conditioner to control and mitigate the power quality problems.

(1989-1992)

- **M. Sc. in Electrical Engineering, with honour**
- Institution: University, Of Garyounis
- Discipline: Electrical and Electronic Engineering.
- Location: Benghazi, Libya
- Thesis: **Control Strategy in Optimal Load Flow**

Research Focus: The research work involved developing a new adaptive control algorithm for optimal load flow to face different power system operating conditions.

(1980-1984)

- **B. Sc. in Electrical Engineering, with high honour**
- Institution: University of Garyounis
- Discipline: Electrical and Electronic Engineering.
- Location: Benghazi, Libya
- Project: **Antennas and Features of Wave Propagation in the Border-to-Border Radio Relay System in Libya**

SUMMARY of QUALIFICATIONS

Over 12 years of practical experience in electrical engineering. Design, supervision and consultation of industrial, commercial and domestic electrical distribution system projects. This includes designing of communication system, firm alarm systems, substations, pumping stations, testing etc. Several years of academic experience in electrical power systems. I was involved in different projects that have covered power flow (optimal power flow in particular), power quality, harmonics, power electronics applications such as active power filters, DC and Flexible AC Transmission Systems (FACTS) and static Var compensators (SVC). I posses a solid background in optimization methods such as linear programming (simplex and interior point methods), quadratic programming and non-linear programming. I am familiar with different software packages such as PSCAD/EMTDC, CPLEX and MATLAB.

WORKING EXPERIENCE

(05/2000- present)

- **Teaching 1st year undergrad course (Circuit Analysis)**

University of Waterloo, Waterloo, Canada
This work includes preparation of course notes and assignment

(1993-1995)

- **Assistant Lecturer**

University of Garyounis, Benghazi, Libya.

(1984- 1993)

- **Electrical Engineer**

Municipality of Benghazi, 7000 Housing Project, Benghazi, Libya
My responsibility includes:

- Reviewing and approving the technical data and electrical engineering drawings for the 11/0.4 kV networks
- Selection the materials and the equipment of the electrical installations for the 11/0.4 kV networks which include 11 kV switching stations, 11/0.4 kV substations, distribution system, electrical installations, and telephone systems.
- Supervising the execution of the electrical installations in 11/0.4 kV substations, distribution system, electrical installations, and telephone systems.
- Commissioning testing.
- Design of electrical works, which include street lighting, substations, etc.

(1989-1990)

- **Consultant Electrical Engineer (Part Time)**

General Electric Company- Benghazi, Libya,
Team member for the renovation downtown distribution system.

- Studying the 11/0.4 kV distribution network in Benghazi city and provide a remedial solution for different problems such as imbalance, excessive neutral current, grounding, and propose a maintenance procedures for the network.
- The mean work of the team includes:
  - Inspection of the Downtown 0.4/11 kV substations (more than 100 distribution substations)
  - Measuring the phase voltages and currents at different locations.
  - Measuring the grounding system of the most substations.

(1991-1992)

- **Electrical Engineer (Part Time)**

Condrill Company (Swedish Company), Benghazi, Libya
Responsible for the electrical design and installation works for the extension of the office buildings of the National Beverages Company

(1991-1995)

- **Engineering Consultant (Part Time)**

Team member in the Libyan Standard Committee for Electrical Installations, Benghazi, Libya.

- The responsibility of the team is to develop a National standard for electrical installation in domestic and commercial areas combatable with IEC standard.

(1992-1995)

- **Electrical Engineer (Part Time)**

Al-Maddaen Engineering Consultant Office, Benghazi, Libya.

- Responsibility includes designing, supervising, and selecting materials for the electrical installations in industrial, commercial, and domestic buildings.

POSTGRADUATE COURSES STUDIED

- Advanced Computational Methods
- Advanced Power Electronics
- Advanced Mathematics
- Generation Theory of Electric Machines
- Industrial and Domestic Distribution Systems
- Insulation Co-ordination in Power systems
- Advanced power system Analysis
- Distribution Systems Engineering
- Applied High Temperature Superconductivity
- Artificial Neural Networks
- Digital Signal Processing
- Power Electronics and Energy Processing
- DC and Flexible AC Transmission

COMPUTER SKILLS

- **Computer network administrator** of the Energy System and Power Quality Labs, University of Waterloo
- **Simulation Packages:** PSCAD/EMTDC, CPLEX, MATLAB and LABVIEW
- **Operating Systems:** WINDOWS and UNIX
- **Platform:** PC and SUN workstations
- **Programming Language:** C, FORTRAN and BASIC
- **Software:** Used software packages for document writing (MS WORD, LATEX), graphic drawing (XFIG and EXCELL), Spreadsheets, presentations (Power Point)

PUBLICATIONS

1. **R. El Shatshat, M. Kazerani, and M.M.A. Salama**, "Modular Approach to Active Power-Line Harmonic Filtering," *Proceedings of IEEE Power Electronics Specialists Conference (PESC 98), Japan,* pp. 223-228, 1998.

2. **R. El Shatshat, M. Kazerani, and M.M.A. Salama**, "ADALINE-Based Controller for Active Power-Line Conditioners," *Proceedings of IEEE Transmission and Distribution Conference (99), New Orleans, Louisiana USA, vol.2, pp.566-571, 1999.*

3. **R. El Shatshat, M. Kazerani, and M.M.A. Salama** , "Modular Active Power Filtering Approaches: Power Splitting verses Frequency Splitting," *Proceedings of Canadian Conference in electrical and computer Engineering (CCECE'99), Edmonton, Canada, 1999, pp. 1304-1308.*

4. E. F. El-Saadany, R. El Shatshat, M.M.A. Salama, M. Kazerani, and A. Y. Chikhani, "Reactance One-Port Compensator and Modular Active Filter for Voltage and Current Harmonic Reduction in Non-Linear Distribution Systems: A Comparative Study," *Electric Power Systems Research (52), 1999, pp. 197-209.*

5. **R. El Shatshat, M. Kazerani, and M.M.A. Salama**, " Multi Converter Approach to Active Power Filtering Using Current Source Converters," *Paper accepted for publication in IEEE Transactions on Power Dilevery.*

6. **R. El Shatshat, M. Kazerani, and M.M.A. Salama**, " Modular Active Power-Line Conditioner," *Submitted to IEEE Transactions on Power Dilevery (Under review).*

7. **R. El Shatshat, M. Kazerani, and M.M.A. Salama**, " Measurement and Mitigation of Power System Harmonics Using Artificial Neural Networks (ANN) Algorithm," *Submitted to IEE Proceedings-Generation, Transmission and Distribution (Under review).*

8. **E. F. El-Saadany, R. El Shatshat, M.M.A. Salama, and A. Y. Chikhani**, " Mitigation of Harmonics Generated by PWM based Adjustable Speed Drivers Utilizing Reactance One-Port Compensators," *Submitted to Electric Power Systems Research Journal (Under review)*

REFERENCES

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