

# PHILIP BARKER

## Technical Publications

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1. "Distribution Feeder Operational Analysis Using Digital Transient Recorders," presented at the 1987 Utility Fault and Disturbance Analysis Conference, Denver, CO, October 1-2, 1987, (co-authors: M.D. Taylor, J.A. D'Angelo, F. Frank, and D.J. Lawrence).
2. "IEEE Tutorial on Distribution Automation - Chapter 3 - Communication Systems for Distribution Automation," presented at the 1988 Summer and 1989 Winter Power Meetings and the 1989 T&D Conference, (co-authors: B.J. Trager and J.R. Redmon).
3. "Voltage Quadrupling on a UD Cable", *IEEE Transactions on Power Delivery*, January 1990, Vol. 5 No. 1, presented at IEEE T&D Conference, New Orleans, LA, April 1989.
4. "Analysis of Lightning Waveforms as Recorded on Typical Distribution Feeders," presented at the 1989 Fault and Disturbance Analysis Conference, New Orleans, LA, September 26-27, 1989, (co-authors: D.J. Lawrence and D. Parrish)
5. "Power Quality Measurements on the Niagara Mohawk Power System," presented at the 1990 Chattanooga IEEE Chapter's Power Quality Seminar, Chattanooga, TN, April 18, 1990, (co-authors: J.J. Burke, C.W. Burns, and R.T. Mancao).
6. "Power Quality Measurements on the Niagara Mohawk Power System ... Revisited," presented at the Second International Power Quality Conference, Philadelphia, PA, October 21-26, 1990, (co-authors: J.J. Burke, C.W. Burns, R.T. Mancao, and J.J. Siewierski).
7. "Protecting Underground Distribution Systems," *Electric Light & Power*, April 1991, (co-author: J.J. Burke).
8. "Characteristics of Lightning Surges Measured at Metal Oxide Distribution Arresters," Paper No. 92 WM 255-0 PWRD, presented at the 1992 IEEE PES Winter Power Meeting, New York, NY, January 26-30, 1992, (co-authors: R.T. Mancao, D.E. Parrish, and D.J. Kvaltine).
9. "Lightning Research Advances with Digital Surge Recordings," *IEEE Computer Applications in Power*, April 1992, Vol. 5, No. 2, (co-author: R.T. Mancao).
10. "Power Quality Monitoring of a Distribution system," presented at the IEEE Summer Power Meeting, Vancouver, British Columbia, July 19-23, 1993, (co-authors: J.J. Burke, R.T. Mancao, T.A. Short, C.A. Warren, C.A. Burns, and J.J. Siewierski).
11. "Photography Helps Solve Distribution Lightning Problems," *IEEE Power Engineering Review*, June 1993, Vol. 13, No. 6, (co-author: C.W. Burns).
12. "Electric Fields Close to Triggered Lightning," presented at EMC '94 ROMA Conference, (co-authors: M.A. Uman, V.A. Rakov, J.A. Versaggi, R. Thottappillil, A. Eybert-Berard, L. Barret, J.P. Berlandis, B. Bador, S.P. Hnat, J.P. Oravsky, T.A. Short, and C.A. Warren).
13. "Induced Voltage Measurements on an Experimental Distribution Line During Nearby Rocket Triggered Lightning Flashes," Paper No. 95 SM 382-2 PWRD, presented at the 1995 IEEE PES Summer Meeting, Portland, OR, July 24-28, 1995, (co-authors: T.A. Short, A. Eybert-Berard, J.P. Berlandis).
14. "Mechanism of the Lightning M Component," *Journal of Geophysical Research*, Vol. 100, No. D12, pp. 25,701-25,710, December 20, 1995, (co-authors: V.A. Rakov, R. Thottappillil, and M.A. Uman).
15. "Lightning Effects Studied - The Underground Cable Program," *Transmission & Distribution World*, May 1996, Vol. 48, No. 5, (co-author: T.A. Short)
16. "Lightning Measurements Lead to an Improved Understanding of Lightning Problems on Utility Power Systems," presented at 11CEPSI Conference, Kuala Lumpur, Malaysia, October 21-25, 1996, (co-author: T.A. Short).
17. "Findings of Recent Experiments Involving Natural and Triggered Lightning," panel session paper presented at 1996 Transmission and Distribution Conference & Exposition, Los Angeles, CA, September 16-20, 1996, (co-author: T.A. Short).
18. "Photovoltaics Support Distribution Feeder," *Electric Light & Power Magazine*, March 1997, Vol. 75, No. 3, (co-authors: B. Bailey and A.J. Peterson, Jr.).
19. "Methods of Providing Enhanced Power Quality Using Distributed Generation," presented at Distributed Resources Week 1997: Business Solutions for a Competitive Environment, Baltimore, MD, October 22-24, 1997, (co-authors: H. Zaininger, M. Kapner, A. Peterson, Jr.)
20. "Surge Arrester Energy Duty Considerations Following From Triggered Lightning Experiments," presented at 1998 IEEE WPM Panel Session on Transmission Line Surge Arrester Application Experience, Tampa, FL, February 1-5, 1998, (co-authors: T.A. Short, H. Mercure, S. Cyr, and J. O'Brien).
21. "Development and Testing of the Power Enhancement and Delivery System (PEDS)," presented at EESAT '98 Conference, Chester, United Kingdom, June 16-18, 1998, (co-authors: H.W. Zaininger, A. Peterson, K. Elsholtz, and A. Warner).

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22. "Integration of Distributed Resources In Electric Utility Systems: Current Interconnection Practice and Unified Approach", presented at Distributed Resources Week 1998: Strategies for Successful Implementation, Milwaukee, Wisconsin, October 21-23, 1998 (co-authors, H.W. Zaininger, F. Goodman).
22. "Modular Distributed Generation Unit Improves Reliability and Quality of Electric Power", March/April 1999 Issue of Power Delivery Magazine, Volume 8, Number 2 (co-authors K. Elsholz, A. Peterson).
23. "Technical Considerations Associated with the Interconnection of Distributed Generation to Distribution Systems", presented at the Electric Council of New England Spring Meeting, April 12-13, 2000 (co-author Robert W. de Mello)
24. "Enhancing the Economics of Photovoltaics through the Use of Advanced PV Technologies and High Value Applications", presented at IEEE Power Engineering Society Summer Meeting, Chicago, Ill., July 21-25, 2002
25. "Ultracapacitors for Use in Power Quality and Distributed Generation Applications", presented at IEEE Power Engineering Society Summer Meeting, Chicago, Ill., July 21-25, 2002
26. "Overvoltage Considerations in Applying Distributed Resources on Power Systems", presented at IEEE Power Engineering Society Summer Meeting, Chicago, Ill., July 21-25, 2002
27. "Power System Modeling Requirements for Rotating Machine Interfaced Distributed Resources", presented at IEEE Power Engineering Society Summer Meeting, Chicago, Ill., July 21-25, 2002 (co-author Brad Johnson)
28. "Advances in Solar Photovoltaic Technology: An Applications Perspective", Presented at IEEE Power Engineering Society Summer Meeting, June 12-16, 2005, San Francisco, CA (co-author James Bing)
29. "Application of Diesel Generation at Hawaiian Electric Substations for Power System Support", presented at IEEE Power Engineering Society General Meeting, June 18-22, 2006, Montreal Quebec, CA.
30. "Unconventional Solutions for Rural Utilities: National Grid Explores Power Quality Upgrades for a Small Adirondack Town", Transmission and Distribution World Magazine, Volume 58, No. 12, December 2006 (co-authors Clay Burns, Tom Short)
31. "HECO Adapts to the Complexity of DG", Transmission and Distribution World Magazine, Volume 59, No. 2, February 2007 (co-authors Brian Bui, Alan Hirayama)
32. "Defining High Penetration PV: Multiple Definitions and Where to Apply", NREL/DOE High Penetration PV Workshop, Denver Colorado, May, 20, 2010
33. "Experiences in Integrating PV and Other DG to the Power System", presented at Utility Wind Interest Group 6<sup>th</sup> Annual Workshop on Wind/Solar Integration, February 22-24, 2012, <http://www.uwig.org/Golden2012/PVDGIntegration-Barker.pdf>
34. "Distributed Solar Integration Experiences", Presented at Utility Wind Interest Group (UWIG) 2013 Distributed Wind/Solar Interconnection Workshop, Golden, Colorado, May 21-22, 2013.
35. "Grounding and Overvoltage Requirements for Distributed Generation", Presented at IEEE PES Engineering Colloquium – Schenectady Chapter, September 19, 2014.
36. "Interconnection of Distributed Energy Resources: Present Day Approaches, Protection Issues and Trends", Presented at Energy Council of the Northeast (ECNE) Spring Engineering & Operations Conference, Warwick, Rhode Island, March 8-9, 2017.