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Nota di contenuto	Power Quality Indices in Liberalized Markets; Contents; About the authors; Preface; Acknowledgements; 1 Traditional power quality indices; 1.1 Introduction; 1.2 Background concepts; 1.2.1 Power quality disturbances; 1.2.2 Power quality disturbances and electromagnetic compatibility; 1.3 Power quality disturbances: indices and objectives; 1.3.1 Waveform distortions; 1.3.2 Slow voltage variations; 1.3.3 Unbalances; 1.3.4 Voltage fluctuations; 1.3.5 Mains signalling voltages; 1.3.6 Voltage dips (sags); 1.3.7 Transient overvoltages; 1.3.8 Rapid voltage changes; 1.4 Conclusions; References 2 Assessing responsibilities between customer and utility 2.1 Introduction; 2.2 Waveform distortions and voltage unbalances: indices based on a single metering section; 2.2.1 Indices based on harmonic

impedances; 2.2.2 Indices based on powers in non-ideal conditions; 2.2.3 Indices based on comparison with an ideal linear load; 2.3 Waveform distortions and voltage unbalances: indices based on distributed measurement systems; 2.3.1 The global index; 2.3.2 The cost of deleterious effects index; 2.4 Voltage fluctuations 2.4.1 An approach based on the correlation between flicker level and load power 2.4.2 An approach based on Gaussian probability functions; 2.4.3 Summation law-based approaches; 2.4.4 Voltage-based approaches; 2.4.5 Voltage and current-based approaches; 2.4.6 Power-based approaches; 2.4.7 A simplified approach; 2.5 Voltage sags; 2.5.1 Disturbance power and energy approach; 2.5.2 Slope of the system trajectory approach; 2.5.3 Resistance sign approach; 2.5.4 Real current component approach; 2.5.5 Distance relay approach; 2.6 Voltage transients; 2.7 Conclusions; References

3 Advanced methods and nonstationary waveforms 3.1 Introduction; 3.2 Discrete time waveforms and windowing; 3.2.1 Hanning windowing; 3.2.2 Result interpolation; 3.2.3 Synchronized processing; 3.2.4 Desynchronized processing; 3.3 Short-time Fourier transform; 3.3.1 Theoretical background; 3.3.2 STFT-based indices; 3.4 Wavelet transform; 3.4.1 Theoretical background; 3.4.2 Wavelet-based indices; 3.5 Parametric methods; 3.5.1 Theoretical background; 3.5.2 Parametric method-based indices; 3.5.3 Some comparisons between DFT-based methods and parametric methods; 3.6 Time-frequency distributions 3.6.1 Theoretical background 3.6.2 Time-frequency distribution-based indices; 3.7 Transient waveform distortions (bursts); 3.7.1 Theoretical background; 3.7.2 Burst indices; 3.8 Conclusions; References; 4 Quantifying the quality of the overall supply voltage; 4.1 Introduction; 4.2 Global indices based on a comparison between ideal and actual voltages; 4.2.1 The normalized RMS error; 4.2.2 The normalized three-phase global index; 4.2.3 The voltage quality deviation factor; 4.3 Global indices based on the treatment of traditional indices; 4.3.1 The global indicator 4.3.2 The unified power quality index

Sommario/riassunto

Power Quality (PQ) indices are a powerful tool for quickly quantifying PQ disturbances. They also serve as the basis for illustrating the negative impact of electrical disturbances on components and for assessing compliance with the required standards and recommendations within a regulating framework. Within these pages lies a comprehensive overview of both the traditional PQ indices in use today and new indices likely to be used in the future. Key features of this book include: a special focus on the metrics for quantifying PQ disturbances; a complete review of methods and indic
