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The introduced manual is aimed at theoretical and practical training of master students in “Power Engineering” discipline (13.04.02. – Electrical Power Industry and Electrical Engineering). One of the main tasks of the manual is to consolidate the theoretical material studied by the students in the first term of the Master Program. The manual also includes the issues of electromagnetic compatibility in electrical supply systems with the object under study – the interaction of the system “power supply network – consumer”. It allows a student to better understand the physical processes running not only during the interaction of consumer power supply systems and power networks but also during the processes of consumer interactions. The authors analyze the quality of consumer electrical power supply on the basis of the system operating conditions in accordance with STANDARD 32144-2013.

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