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The building of Internet data centers (IDCs) is a growing industry that is pushing the limits of electric power and reliability requirements. As utilities must decide whether it is worth the cost to build new infrastructure to keep up with the present demand, facility operators are looking at power distribution designs that will improve efficiency and allow them to continue to expand their operations.

To meet customer expectations of “five nines” — or 99.999% — availability, IDC designers must improve power quality, reliability, and efficiency. In this quest, redundancy in the system becomes absolutely necessary, but also important are power quality issues such as mitigation of voltage fluctuations and harmonics and good techniques for grounding.

This PQ TechWatch provides information about the types of data centers being built and their design, along with new standards and certification processes that are being developed. Detailed descriptions are provided of power quality considerations and possible solutions. Grounding is given its own section, where electrical standards for safe and effective grounding are discussed and examples provided.



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