53. Title: A transformer-less multilevel inverter system

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Key Words: DC source, Transformer, Inverter

Domain: Power Generation & Distribution

Summary: A multi-level inverter topology is developed to provide a capacitor balancing of neutral point clamped (NPC) with level doubling network (LDN) operation and by adding a low power non-isolated buck-boost converter. The topology replaces all the main H bridges of three phases by 3-Φ T type neutral point clamped (TNPC) converter. This topology provides a high-resolution output. It also overcomes the capacitor imbalance due to LDN operation.

Advantages:

» High power quality

» Enhanced reliability

» Efficiency with a smaller number of components as compared to existing

Applications: Energy Management, UPS, speed controller

Scale of Development: A prototype system is developed and tested in the laboratory.

Technology Readiness Level: 4

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