

(12) **United States Patent**  
**Lemez et al.**

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(54) **METHOD AND SYSTEM FOR REDUCING LOSSES DURING ELECTRICAL POWER DISTRIBUTION**

(58) **Field of Classification Search**  
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H02M 1/10; H02J 3/005; H02J 3/26;  
H02J 3/38  
See application file for complete search history.

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(56) **References Cited**

U.S. PATENT DOCUMENTS

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5,396,165 A 3/1995 Hwang et al.  
5,604,385 A \* 2/1997 David ..... H02J 3/14  
307/52

(Continued)

(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

FOREIGN PATENT DOCUMENTS

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OTHER PUBLICATIONS

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International Search Report, dated Apr. 5, 2017, for PCT/CA2016/051553, 3 pages.

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(57) **ABSTRACT**

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**Related U.S. Application Data**

Systems and methods which employ a distribution circuit adaptor (DCA) inserted into a branch supply circuit at a (site specific) suitable location between a trunk and the loads that each existing branch feeds. The systems and methods may identify the optimal location at which to insert one or more DCAs. In some implementations, the all-earthen grounding between the source and the step down transformers feeding a load site can be replaced. Such may be achieved by using pairs of existing trunk conductors to complete the return circuit on the primary side of the DCA, and optionally an additional dedicated return conduit to complete the return circuit on the secondary side of the DCA.

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(52) **U.S. Cl.**  
CPC ..... **H02J 3/005** (2013.01); **H02J 3/00** (2013.01); **H02J 3/38** (2013.01); **H02J 3/26** (2013.01); **Y02E 40/50** (2013.01)

**18 Claims, 4 Drawing Sheets**

