



# IEEE Guide for the Implementation of Inductive Coordination Mitigation Techniques and Applications— Corrigendum 1

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**IEEE Power & Energy Society**

Sponsored by the  
IEEE Power Systems Communications Committee

IEEE  
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(Corrigendum to  
IEEE Std 1137-1991)



# **IEEE Guide for the Implementation of Inductive Coordination Mitigation Techniques and Applications— Corrigendum 1**

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**IEEE Power Systems Communications Committee**  
of the  
**IEEE Power & Energy Society**

Approved 11 September 2009  
**IEEE-SA Standards Board**

**Abstract:** IEEE Std 1137™-1991 provides guidance for controlling or modifying the inductive environment and the susceptibility of affected wire line telecommunications facilities in order to operate within the acceptable levels of steady-state or surge induced voltages of the environmental interface (probe wire) defined by IEEE Std 776™-1987. Procedures for determining the source of the problem are given. Mitigation theory and philosophy are discussed, and mitigation devices are described. The application of typical mitigation apparatus is addressed. Advice for determining the best engineering solution is offered, and general safety considerations are discussed.

This corrigendum corrects Table 3—Longitudinal Balance Performance Thresholds and the first and last sentences of the third paragraph in 8.5 of IEEE Std 1137-1991.

**Keywords:** coordination, coupling, harmonic, ICEP, impedance, inductive, influence, mitigation, mutual, noise, power, susceptibility

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## Introduction

This introduction is not part of IEEE Std 1137-1991-Cor1-2009, IEEE Guide for the Implementation of Inductive Coordination Mitigation Techniques and Applications—Corrigendum 1.

This corrigendum corrects Table 3—Longitudinal Balance Performance Thresholds and the first and last sentences of the third paragraph in Clause 8.5. These are errors in the 1991 printed version of this guide.

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**Percy E. Pool**, *Co-Chair and Technical Editor*

**Larry S. Young**, *Co-Chair and Secretary*

Ron Baysden  
Steve Blume  
Joe Boyles  
Claude Brisson  
Timothy Conser  
Jean DeSeve

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David P. Hartmann  
Patrick Hawkins  
Harold Held

Daniel Jandek  
Richard L. Knight  
Randall Mears  
Harvey Nerhood  
Bill Petersen  
Mark Simon

The following members of the individual balloting committee voted on this guide. Balloters may have voted for approval, disapproval, or abstention.

William J. Ackerman  
Chris Brooks  
F. Denbrock  
Gary Engmann  
Jalal Gohari  
Gaetano Grano  
Randall Groves  
Werner Hoelzl  
Tanuj Khandelwal

J. Koepfinger  
Jim Kulchisky  
Federico Lopez  
G. Luri  
H. E. Nerhood  
Michael S. Newman  
Percy Pool  
Iulian Profir  
Charles Rogers

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Gil Shultz  
Gary Stoedter  
John Tengdin  
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John Vergis  
James Wilson  
Larry Young

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Jim Hughes  
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Young Kyun Kim  
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John Kulick

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Narayanan Ramachandran  
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Lorraine Patsco

*IEEE Standards Program Manager, Document Development*

Matthew J. Ceglia

*IEEE Standards Program Manager, Technical Program Development*

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The editing instructions are shown in ***bold italic***. Four editing instructions are used: change, delete, insert, and replace. ***Change*** is used to make corrections in existing text or tables. The editing instruction specifies the location of the change and describes what is being changed by using ~~strike through~~ (to remove old material) and underscore (to add new material). ***Delete*** removes existing material. ***Insert*** adds new material without disturbing the existing material. Insertions may require renumbering. If so, renumbering instructions are given in the editing instruction. ***Replace*** is used to make changes in figures or equations by removing the existing figure or equation and replacing it with a new one. Editing instructions, change markings, and this NOTE will not be carried over into future editions because the changes will be incorporated into the base standard.

## 5. Determining the Source of the Problem

### 5.2 Communication Noise Investigation

#### 5.2.2 Noise Performance Thresholds

**Table 3—Longitudinal Balance Performance Thresholds**

*Replace Table 3 with this updated table:*

**Table 3—Longitudinal Balance Performance Thresholds**

Longitudinal Balance (dB) (C-Message)	Performance Category
>60	Recommended
50 – 60	Acceptable
<50	Not recommended

## 8. Application of Typical Mitigation Apparatus and Techniques

### 8.5 Application of Shielding

*Change third paragraph to read:*

The residual current in the power line induces a voltage ( $50 \text{ V} < 0^\circ @ 60 \text{ Hz}$  & and  $500 \text{ mV} < 0^\circ$  at  $900 \text{ Hz}$ ) in ~~all conductors~~ all conductors and cable shield between locations A and G. Shield current flows in the cable shield between locations A and G. The magnitude ( $8.3 < -25^\circ \text{ A} @ 60 \text{ Hz}$  and  $14.5 < -77^\circ \text{ mA} @ 900 \text{ Hz}$ ) is the quotient of the induced voltage and the self-impedance of the cable shield ( $6.04 < 25^\circ @ 60 \text{ Hz}$  and  $34.5 < 77^\circ \Omega @ 900 \text{ Hz}$ ). The shield current induces a counter voltage in the two 100-pair complements between locations A and G. The value is the product of the shield current and the mutual impedance between the shield and pairs ( $2.6 < 86.5^\circ \Omega @ 60 \text{ Hz}$  and  $33.9 < 85.76 < 85.76^\circ \Omega @ 900 \text{ Hz}$ ).