4th IET Professional Development Course on Railway Electrification Infrastructure & Systems 2009

(REIS)

IET Seminar Digests 09/12715

London, UK
1-5 June 2009

ISBN: 978-1-61567-587-6
TABLE OF CONTENTS

Sustainability - Challenges for the Rail Industry .............................................................. 1
   R.J. Kemp

Electric Railway Systems in Common Use ................................................................. 6
   F. Schmid, C.J. Goodman

Customer Requirements: The Driver for Engineering Solutions ............................ 21
   N.H. Wrobel

Modelling and Simulation ....................................................................................... 27
   C.J. Goodman

Upgrading the London Underground Power Supply System .................................... 37
   D. Stinton

DC Electrification Supply System Design ................................................................. 44
   R.D. White

Electric Contact Systems - Passing Power to the Trains ......................................... 70
   D.J. Hartland

Protection for DC Substations and AC Track Feeder Stations ............................... 83
   D.C. Knights

AC 25 kV 50 Hz Electrification Supply Design ....................................................... 93
   R.D. White

Overhead Line Equipment Design and Pantograph Interface .................................. 127
   K. Warburton

Railway Signalling .................................................................................................... 134
   D. Fenner

The Impact of Electrification on Railway Signalling Systems .................................. 141
   F.J. Foley

Railway Communications Systems ........................................................................... 149
   B.R. Aldred, N.S. Gorasia

SCADA & Related Telecommunications Systems .................................................... 168
   T.A. Loades

Auxiliary Plant & Equipment for Station and Tunnel Services ............................... 175
   E.W. Boddington, D.J. Burton

Electrification System Testing .................................................................................. 190
   R. Catlow

Railway Electrical Systems Integration and Electromagnetic Compatibility (EMC) . . 198
   L.M. McCormack, P.W. Hooper

Integration for EMC and Network Rail's Management Process ............................. 212
   M.V. Petkova

AC and DC Electric Railway Interfaces ..................................................................... 220
   N. Jordan

Compatibility Between Railway Electrical Systems - Methodology and Examples . 225
   D.N. Bradley

Impact and Management of Stray Current on DC Rail Systems ............................ 237
   P. Aylott, I. Cotton, C.A. Charalambous

Sustainability and Carbon Reduction on Electrified Railways .............................. 245
   G. McFadden

Sustainable Traction Drives ..................................................................................... 254
   S. Hillmansen

Author Index