CONTENTS
Volume 2

Page
SESSION WA3: Total Plant Asset Management and Maintenance Strategy
Chair: I.E. Alguindigue (Fisher-Rosemount)

40.01 Reducing Costs and Increasing Asset Utilization with The Best in Class Model.
D.W. King (The Sinclair Group)

41.01 Reliability Survey of Accelerator Facilities.
C. Piaszczyk (Northrop Grumman Corporation), M. Rennich (Oak Ridge National Laboratory)

42.01 PlantWeb: An Architecture for Plant-Wide Maintenance, Reliability, and Control.
I.E. Alguindigue, L. Hirshfeld, N.L. Quist (Fisher-Rosemount)

43.01 Reliability Strategies: Driving Financial Performance By An Enterprise Approach to Reliability.
J.W. Davis (HSB Reliability Technologies)

44.01 Advanced Maintenance Strategies: The Impact of Work Processes on Enhancing Maintenance Management System Effectiveness.
N.L. Quist (Fisher-Rosemount), D.W. King (The Sinclair Group)

45.01 The Benefits of Open Data Standards in Achieving Optimized Asset Utilization.
K.D. Bever (ENTEK-IRD International)

46.01 Information System for Different Maintenance Strategies.
N. Majdandzic, S. Sebastijanovic, T. Saric (The University in Osijek, Croatia)

SESSION WP1: Electric Motor Condition Monitoring-II
Chair: H. Meyer (Lockheed Martin Energy Systems)

47.01 Detection Of Armature Faults In DC Motors.
C. Ayers, D.A. Casada, J. Kueck, D. Rothrock (Lockheed Martin Energy Research Corporation)

48.01 Real Time Diagnostics and Process Reliability.
E.O. King, R.A. Manzini, J.B. Moreland (ALCOA)

49.01 Introducing “Status” Smart Technology for Induction Electric Motors.
M.J. Bosserly (Computational Systems, Inc., STATUS Technologies)

50.01 Identifying Motor Defects Through Fault Zone Analysis.
N.P. Bethel (PdMA Corporation)
51.01 *Magnetic Flux Positioning for Maximizing Analysis Capabilities.*
S.V. Bowers (Computational Systems, Inc.)

**SESSION WP2: Advanced Sensors and Emerging Technologies**
Chair: J.W. Hines (The University of Tennessee)

52.01 *Developing a Smart Sensor Architecture Based on IEEE 1451.*
M.A. Buckner (Oak Ridge National Laboratory), S. Chen (AEPTEC Microsystems Inc./AEPCO)

M.A. Essawy, S. Diwakar, S. Zein-Sabatto, (Tennessee State University)
A.K. Garga (The Pennsylvania State University)

54.01 *X-Ray Fluorescence Microtomography Study of Trace Elements in a SiC Nuclear Fuel Shell.*
M. Naghedolfeizi, J.-S. Chung, G.E. Ice (Oak Ridge National Laboratory)
W.B. Yun, Z. Cai, B. Lai (Argonne National Laboratory)

55.01 *On-Line Sensor Calibration Monitoring and Fault Detection for Chemical Processes.*
X. Xu, J.W. Hines, R.E. Uhrig (The University of Tennessee)

56.01 *Real-Time Spectral Pattern Recognition Using Neural Networks for Condition Monitoring.*
E. Turkcan (Delft University of Technology, The Netherlands)

**SESSION WP3: Modeling and Optimization Methods**
Chair: L. Frair (The University of Alabama)

57.01 *Human-Machine Cooperative Telerobotics with Uncertain Sensor and Model Data.*
R.V. Dubey, S.E. Everett (The University of Tennessee)

58.01 *System Modeling and Instrument Calibration Verification with a Nonlinear State Estimation Technique.*
C.L. Black (DRYKEN Technologies, Inc.) R.E. Uhrig (The University of Tennessee and Oak Ridge National Laboratory), J.W. Hines, (The University of Tennessee)

59.01 *A Proposed Maintenance Strategy Analysis Using Simulation.*
R. Sawhney, F. Willis, M. Upton (The University of Tennessee)

60.01 *Synchronous Maintenance Repair and Operating Systems.*
M. R. Goldstein (Infosource)
SESSION RA1: Advanced Techniques for Machinery Fault Detection
Chair: D.A. Wrest (Honeywell Inc.)

61.01 Shipboard Machinery Condition Based Maintenance.
G.D. Hadden, T.G. Edwards (Honeywell Technology Center), J. Van Dyke (PredictDLI)

62.01 A Wavelet Neural Network Framework for Diagnostics of Complex Engineered Systems.
G. Vachtsevanos, P. Wang (Georgia Institute of Technology), J. Echauz (University of Puerto Rico)

63.01 Nonlinear State Estimation for Condition Monitoring in Complex Systems.
S. Menon (Honeywell Technology Center)

64.01 State-Estimation and Concurrent Incipient Anomaly Detection for Nonlinear Processes.
R.B. Williams, Jr., A.G. Parlos (Texas A&M University)

65.01 Acoustic Emission Monitoring of Railcar Wheel Bearings.
J. Schoess, D. Busch, R. Hamza, (Honeywell Technology Center)

66.01 Neural Network Training By Extended Kalman Filtering for Detection of Signal/System Failures.
E. Turkcan, J.G.E. Versteegh (Delft University of Technology, The Netherlands)

SESSION RA2: Sensor Technology
Chair: E. Turkcan (Delft University, The Netherlands)

67.01 Leakage Detection in Nuclear Power Plants Using Ultrasonic Microphone Array System.
M. Sakuma, S. Kanemoto, M. Ochiai (Toshiba Corporation,) K. Higuma, M. Kobayashi (Isogo Engineering Center, Toshiba Corporation, Japan)

68.01 Subcooled Boiling Detection Using Spectral Analysis of Pressure Transducer Signals.
A. Alvim de Castro, D.K.S. Ting (IPEN, Brazil)

69.01 Feasibility of Applying Distributed Piezotransducers to Structural Damage Detection.
G. Kawiecki, A. Seagle (The University of Tennessee)

SESSION RA3: Industry Experience and Case Studies
Chair: P.S. Chang (TVA)

70.01 CMMS Manager Takes Control of Equipment and Reduces Inventory at the Same Time.
J. Leonard, K. Shafer (PulsePoint Technology)
Reliability-Based Root Cause Analysis Techniques.
P.S. Chang (Tennessee Valley Authority, Chattanooga)

Predictive Maintenance of Machine Tools by Intelligent Tool Condition Monitoring.
P. Fu, A.D. Hope, G.A. King (Southampton Institute, United Kingdom)

SESSION RA4: Maintenance and Reliability Engineering Education and Training
Chair: T.W. Kerlin (The University of Tennessee)

Teaching Refinery Engineers To Use RCM and Other Reliability Tools.
S.P. Shores (HSB Reliability Technologies, Inc.)

A University's Response to the Industrial Maintenance and Reliability Challenge.
T.W. Kerlin, T.E. Shannon (The University of Tennessee)

Nondestructive Examination Education and Training.
H.M. Stephens, Jr. (EPRI NDE Center)

AUTHOR INDEX