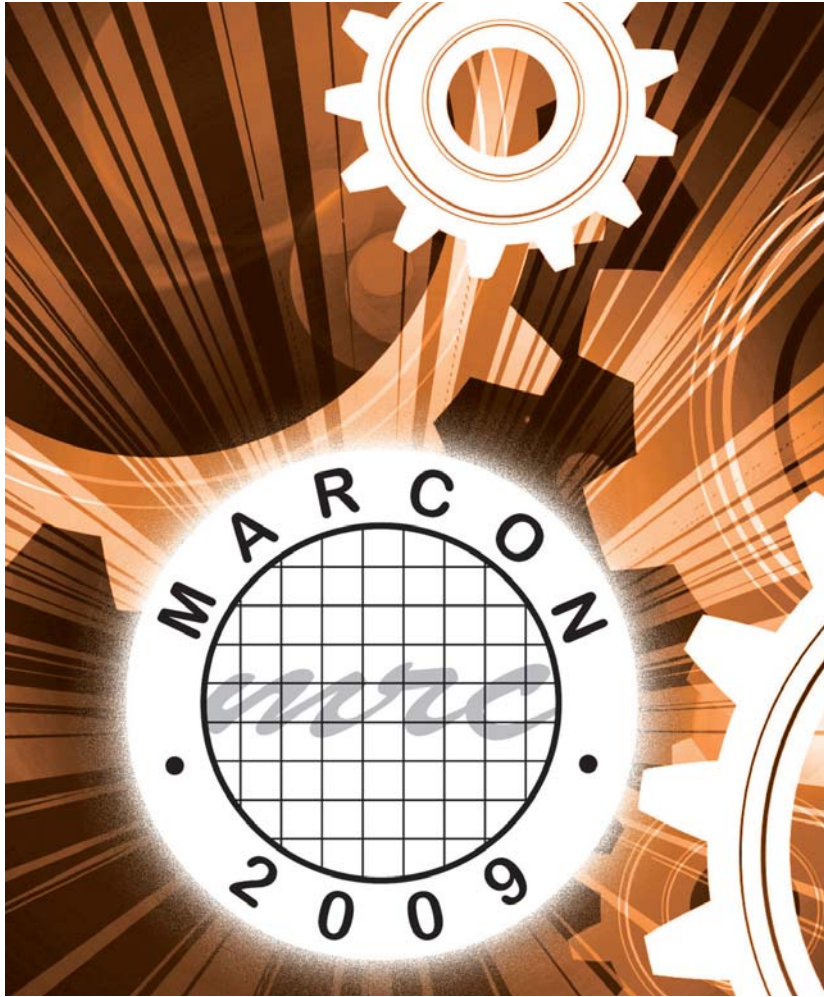


THE MAINTENANCE & RELIABILITY CONFERENCE



Dr. Peter Martin
VP of Invensys
And awarded
Fortune Magazine's
U.S. Hero of
Manufacturing



Stephen J. Toth, Jr.
VP of Maintenance
Asset Reliability for
Covanta, the global
leader in the Energy
from Waste (EfW)
Industry

MAY 4-7, 2009—KNOXVILLE MARRIOTT, KNOXVILLE, TN

OUTSTANDING
WORKSHOPS, EXHIBITS,
PRESENTATIONS
& TUTORIALS

Visit the Exhibit
Area at No Charge

ASSET
MANAGEMENT
STRATEGIES

BEST
PRACTICES

CASE
STUDIES

NEW
TECHNOLOGY
& RESEARCH

EXHIBIT
AREA &
NETWORKING

This conference is a forum for all [practitioners, specialists, educators, students and even the new and uninitiated] to learn and exchange information on new and emerging technologies as well as on tried and proven methods and technologies in the area of maintenance and reliability engineering and management.



For more information or to register, contact:
phone 865-974-9625 web site www.engr.utk.edu/mrc/marcon
phone 888-575-1245 web site www.maintenanceconference.com



Workshop & Conference Schedule

Monday, May 4

8 am—4 pm Workshops 1, 2, & 3

Tuesday, May 5

8 am—4 pm Workshops 1, 4, & 5
4 pm—6 pm Welcome Reception in Exhibit Area

Wednesday, May 6

8 am—9:30 pm Welcome and Keynote # 1
9:30 am—5 pm Presentations & Exhibits
6 pm—7 pm Networking & Social Hour in Exhibit Area
7 pm—9 pm Banquet

Thursday, May 7

8 am—9:30 pm Welcome & Keynote # 2
9:30 am—4 pm Presentations
4 pm—4:30 pm Closing and Give-Aways

Workshop Descriptions

Workshop 1: Weibull Analysis 2 Days; Monday and Tuesday, May 4-5
Led by Dr. Bob Abernethy, Consultant

This two-day Weibull Workshop is based on “**The New Weibull Handbook**” which will be provided to attendees including the **SuperSMITH Software (a \$960 retail value)**. The text is largely extracted from “**The New Weibull Handbook**” covering the basic material for reliability and statistical analysis of life data. The objective is to provide an understanding of basic Weibull analysis including hands-on work with computer case studies.



Workshop 2: Lean Maintenance 1 Day; Monday, May 4
Led by Ricky Smith, Allied Reliability

This one-day workshop will help the attendee discover how to apply time-tested principles of “Lean Manufacturing” to the maintenance organization and process. Learn how to make a gigantic impact on your organization in these time of economic crisis. The workshop will cover topics such as:

- What is Lean Maintenance?
- Value Stream Mapping
- KPIs: Developing Leading/Lagging Indicators
- Applying Six Sigma to a Maintenance Improvement Program

Continued on Page 3

Workshop Descriptions (continued)

Workshop 3: Identifying Human Error to Improve Equipment Reliability 1 Day; Monday, May 4 Led by Ken Reed, System Improvements

It's no surprise that when asked if human error contributes to poor equipment reliability, maintenance and reliability professionals will answer with a resounding "Yes!" Unfortunately, ask them how often they have identified the human performance root causes for their machinery failures, and the answer is not nearly so positive. This will be a hands-on workshop to identify gaps in "normal" troubleshooting techniques. You will not only uncover the physical causes of equipment failure, but you will determine whether the failure is truly an equipment failure or human error. By the end of the workshop, you will be able to:

- Identify limitations of traditional troubleshooting techniques
- Use a structured methodology in collecting evidence
- Fully describe a failure by using robust data-gathering and organizing techniques
- Use unique tools to get to the physical cause of the problem
- Identify the human performance issues surrounding an equipment failure
- Analyze a problem in a new process or mechanical system and look for root causes
- Identify appropriate corrective actions for the root causes identified
- Demonstrate the value in properly identifying the actual root causes of an equipment failure

Workshop 4: Physical Asset Management 1 Day; Tuesday, May 5 Led by John Mitchell, Consultant

Virtually every manufacturing, production and operating company is focused on a single objective—safely achieving greater output at less cost from physical plant and infrastructure assets. Stated more simply—increasing return on assets.

This workshop defines Asset Performance Management as a flexible, results oriented master process that provides the direction, prioritization and focus that are essential to assure Reliability and Maintenance best practices are selected and optimally applied to deliver rapid, demonstrable business objectives.

Identifying and prioritizing opportunities for improvement within your operating environment, building on your organizational strengths and applying the best of current processes such as TPM, RCM, CBM and RCFA to gain optimum performance, effectiveness and lifetime value from your physical assets are all covered in depth.



Workshop 5: Introduction to Reliability – Basics and Intermediate 1 Day; Tuesday, May 5 Led by David Walker, ABS Consulting

This workshop covers the concepts of modern reliability science and methodologies, emphasizing that systems should be developed, designed, and modified with reliability as a key goal. This workshop defines reliability and presents the three fundamental principles for achieving reliability excellence.

Several key areas are covered, including:

- * Reliability terminology and concepts
- * Reliability focused design considerations
- * Key reliability management principles
- * Cost considerations of unreliability
- * Introduction to a variety of proactive reliability analysis techniques
- * Overview of key management systems needed for reliability improvement
- * Application of root cause analysis (RCA) to chronic and acute equipment failures
- * Basic principles and concepts of reliability-centered maintenance (RCM)

Keynotes & Special Presentations

Real Time Business Strategies Drive New Horizons in Maintenance

(Reliability and Operations of Industrial Assets)

by Dr. Peter Martin, Vice President, Invensys

Asset Reliability – Putting It All Together

by Steve Toth, Vice President, Covanta Energy

If People Are Our Greatest Asset, Why Are We Still Allowing Them to Get Hurt?

by Bart Jones, Arnold Engineering Development Center/ATA

Papers / Presentations

Lessons Learned in Establishing an Effective PdM Program at AEDC by Walt Bishop, Arnold Engineering Development Center, Arnold, AFB

Choosing and Using Maintenance KPI's! by Scott Buker, DENSO

A Unified Failure Mode Based Approach to Stockpile Reliability by Kelley Caflin, U.S. Army -Picatinny Arsenal

Why Aren't "Lean" Initiatives Working in the Maintenance Arena? by Thomas Carroll, NetJets, Inc.

A Global Automotive Maintenance Management System Based on Reliability Analysis by Dr. D.E. Castro, Technical Federal Center of Minas Gerais

Continuous Improvement Through the Eyes of a Career Maintenance Practitioner by Mike Chambers, Abidian, Inc.

Making Maintainability Part of Your "Overall" Equation by Roger Collard, Wyle Laboratories

Integrating Reliability Engineering Concepts into Capital Projects: Lessons Learned in a Case Study

by Dan DeGrendel, Boehringer-Ingelheim Roxane / Bob DiFrancesco, ARMS Reliability Engineers

Air Liquide Breaks Down Condition Monitoring Information Silos by Chad Broussard, Air Liquide / Heather DeJesus, Azima DLI

Digital Accelerometer Advantages by Mike Edick, Wilcoxon Research, Inc.

BP Chemical and ABB Turn Reliability Initiative into Operational Excellence by Dan Glossner, BP Chemical

U.S. Army Stockpile Reliability Programs (SRP) by Kevin James and Eric Hunt, U.S. Army – RDECOM (Redstone Arsenal)

Wireless Sensors for Predictive Maintenance of Rotating Equipment in Industrial Environments by C.J. Kiger, AMS Corporation

Analysis of Failure in Repairable Systems by Walter Lastinger, Naval Air Systems Command / David Nelson, Wyle Laboratories

Continued on Page 5

Papers / Presentations (continued)

A Case Study: Analyzing and Improving the Reliability and Performance of the University of Tennessee's Chilled Water System by Dr. Haitao Liao, University of Tennessee Nuclear Engineering Department

Leadership, Reliability & High Gas Prices: Building a Reliability Culture Foundation by Bob Williamson, Strategic Work Systems, Inc.

Management Considerations for CBM Success by Daniel Lynn, Lynn Reliability

Design, Application and Use of an Asset Management Program Assessment Scorecard by John Mitchell, Consultant

Implementing the Basics to Improve Manufacturing Excellence by Stan Moore, Solutia, Inc.

ROI Case Study of Infrared Windows—Paper Mill by Martin Robinson,IRISS

Reciprocating Compressor Condition Monitoring for Maintenance Optimization by Trinath Sahoo, Indian Oil Corporation Ltd.

Role of Reliability in Sustaining Lean Systems by Dr. Rupy Sawhney, University of Tennessee Center for Productivity Innovation

Root Cause Analysis Leads to the Active Control of Torsional Resonance to Reduce Fatigue by Jim Shackelford, Peabody Energy

Prognostics Analysis of Pump Joint Time Frequency Vibration Analysis by Michael Sharp, University of Tennessee Nuclear Engineering Department

Effective Asset Management by Don Turner, Jacobs

Case Study: Changing Cultures in a Heavy Industrial Environment by Robert Uncapher, Minco, Inc.

Sensor Placement Design for a Nuclear Desalination Process Using Fault Diagnostic Observability and Reliability Criteria by Dr. Belle Upadhyaya and Fan Li, University of Tennessee Nuclear Engineering Department

An Analysis of Reliability Growth Models Using a Simulation Test Bed by Martin Wayne and Paul Ellner, U.S. Army – Material Systems Analysis Activity

Exhibit Area

Be sure to spend time with our Solution Providers in the Exhibit Area.

Exhibition Hours

Tuesday, May 5: 4 pm-6 pm

Wednesday, May 6: 8 am-7 pm

MARCON 2009

Now in the thirteenth year of presenting an annual conference in the vital area of reliability and maintenance, the UT MRC is bringing together attendees from both industry and academia; from both the private and the public sectors; from organizations just starting in maintenance and reliability to those well along in their journey. This conference will allow the attendees to immerse themselves in ideas—some new, some reinforcing already known truths—to help them better prepare for meeting and beating the competition. In addition to the excellent papers, panel discussions and other formal exchanges, there will be plenty of time for networking and sharing with both old and new acquaintances.



MARCON 2009 will be held in Knoxville, TN at the Marriott Hotel, located on the east side of downtown and about one mile from the University of Tennessee campus. We invite you to bring your family and friends and arrive early, stay late, or both, to really enjoy the warmth and hospitality of this beautiful area. Knoxville has much to offer visitors, both in town and in the nearby vicinity. From the Old City area to the new Riverfront area to the University, conference attendees and family members will find a myriad of shops, restaurants, parks, and other points of interest. Further out, the Great Smoky

Mountains National Park, Gatlinburg, Pigeon Forge, Oak Ridge, and many other attractions will appeal to your interests. You can find plenty to do for yourselves or for family members in addition to attending MARCON.

Hotel Accommodations

The Knoxville Marriott is located on a hilltop overlooking the Tennessee River. It is within walking distance of the Women's Basketball Hall of Fame and the Riverfront, and is located one mile from the University of Tennessee Campus. The Marriott offers its guests a full range of amenities.

Discounted accommodations have been secured exclusively for MARCON 2009 at the Knoxville Marriott, but the discounted rates are available only until **April 3, 2009**.

Please keep in mind MARCON contracts with its conference hotel for a limited number of rooms. When the hotel fills, they must refer additional requests to other nearby hotels.

For reservations, please visit our website, www.engr.utk.edu/mrc for a direct link to the hotel or call the Knoxville Marriott directly at 1-800-228-9290 and use the group code MARCON for the discounted accommodation rate.



**Knoxville Marriott
500 Hill Ave. SE
Knoxville, TN 37915
865-637-1234**

Climate

East Tennessee is usually sunny with average highs in the upper 70's and average lows in the mid 50's in May.

Conference Registration

You may register on-line at our website, www.engr.utk.edu/mrc. Or you may use the enclosed Conference Registration Form. Your registration fee will be discounted if you register **before April 3, 2009**. And if your company registers three, your fourth registration is free.



CONFERENCE REGISTRATION FORM

Maintenance And Reliability Conference

Knoxville Marriott

May 4–7, 2009

Name: _____ Preferred Name for Nametag: _____

Job Title: _____

Company/Division: _____ Address: _____

City: _____ State: _____ Zip: _____ Country: _____

Phone: () _____ Fax: () _____ E-Mail: _____

Payment is due in full at time of registration
(please indicate your plans on appropriate lines below)

Package	Until April 11	After April 11	\$ _____
FOUR (4) DAY REGISTRATION PACKAGE — (May 4-7)			
2 days of workshops +2 days of conference (Check workshop #1* or two other W/S selections below)			
Normal Attendee	\$1,400	\$1,540	\$ _____
Primary Author/Presenter	\$700	\$770	\$ _____
UT Faculty/Student	\$700	\$770	\$ _____
* Add if choosing W/S #1	\$260	\$290	\$ _____
THREE (3) DAY REGISTRATION PACKAGE — (May 4/5-7)			
1 day of workshops + 2 days of conference (Check a workshop from #2 - #5 selection below)			
Normal Attendee	\$1,100	\$1,210	\$ _____
Primary Author/Presenter	\$350	\$385	\$ _____
UT Faculty/Student	\$350	\$385	\$ _____
TWO (2) DAY CONFERENCE REGISTRATION — (May 6-7)			
Normal Attendee	\$850	\$935	\$ _____
Primary Author/Presenter	\$ 0	\$0	\$ _____
UT Faculty/Student (no meals)	\$ 0	\$0	\$ _____
WORKSHOP(S) ONLY REGISTRATION — (May 4 &/or 5)			
Check appropriate workshop(s)			
___ W/S #1 May 4 & 5	\$960	\$1060	\$ _____
___ W/S #2 May 4	\$350	\$385	\$ _____
___ W/S #3 May 4	\$350	\$385	\$ _____
___ W/S #4 May 5	\$350	\$385	\$ _____
___ W/S #5 May 5	\$350	\$385	\$ _____

ADDITIONAL OPTIONS

___ Guest Lunch Tickets @ \$25 each	\$ _____
___ Guest Banquet Tickets @ \$35 each	\$ _____
___ Additional Proceedings @ \$75 each	\$ _____

Sub-Total of selected items	\$ _____
10% Discount for MRC member companies	— \$ _____
GRAND TOTAL ENCLOSED	\$ _____

Group Discount!! — Register 3 people and get the 4th free!!

METHOD OF PAYMENT:
(must accompany registration)

Check # _____

Money Order # _____

Make payable to:
The University of Tennessee
(in U.S. Dollars)

OR:

Visa # _____

MasterCard # _____

Exp. Date _____

Signature _____

CANCELLATION POLICY

A full refund will be issued for cancellations prior to 04/11/09.

A 50% refund will be issued for cancellations between 04/11/09 and 04/30/09.

REFUNDS WILL NOT BE AVAILABLE AFTER 4/30/09

Register On-Line at:
www.engr.utk.edu/mrc
OR

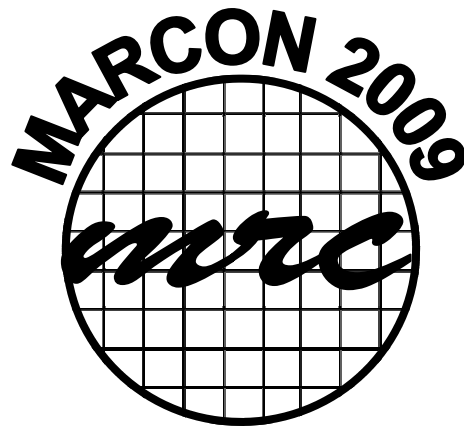
Fax or mail registration form with payment to:

MARCON 2009 Registration
The University of Tennessee
MRC
506 East Stadium Hall
Knoxville, TN 37996-0750

Phone (865) 974-9625

Fax (865) 974-4995

The University of Tennessee
Maintenance and Reliability Center
505 East Stadium Hall
Knoxville, TN 37996-0750



MAY 4-7, 2009

The University of Tennessee, Knoxville does not discriminate on the basis of race, sex, color, religion, national origin, age, disability or veteran status in provision of education programs and services or employment opportunities and benefits. This policy extends to both employment by and admission to the University. The University does not discriminate on the basis of race, sex, or disability in the education programs and activities pursuant to the requirements of Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act (ADA) of 1990. Inquiries and charges of violation concerning Title VI, Title IX, Section 504, ADA, the Age Discrimination in Employment Act (ADEA), or any of the other above referenced policies should be directed to the Office of Diversity Resources & Educational Services (DRES); 1210 Terrace Ave., Knoxville, TN 37996-3560; telephone (865) 974-2498 (TTY available). Requests for accommodation of a disability should be directed to the ADA Coordinator at the Office of Human Resources Management; 600 Henley St., Knoxville, TN 37996-4125. Publication No. R01-1302-079-001-09