

CIBO Boiler Operations, Maintenance, and Performance Conference 2016

Hershey, Pennsylvania, USA
23 – 26 May 2016

ISBN: 978-1-5108-2539-0

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2016) by Council of Industrial Boiler Owners
All rights reserved.

Printed by Curran Associates, Inc. (2016)

For permission requests, please contact Council of Industrial Boiler Owners
at the address below.

Council of Industrial Boiler Owners
6801 Kennedy Road
Suite 102
Warrenton, VA 20187
USA

Phone: 540-349-9043
Fax: 540-349-9850

cibo@cibo.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

Boiler Operations, Maintenance & Performance Conference

TECHNICAL SEMINAR – SELECTED PAPERS

TABLE OF CONTENTS

1. **Conference Summary**
Carl R. Bozzuto, Consultant

- A. **REVIEW OF CONCURRENT FORUM DISCUSSIONS**
 - A.1. Owners Only Roundtable and Forum N/A
Gary Merritt, Inter-Power/AhlCon Partner, L.P.
See Summary

 - A.2. Informal Equipment and Service Suppliers' Only Forum N/A
Ajay Kasarabada, Black & Veatch Corporation
See Summary

- B. **OWNERS' SURVEY & BENCHMARKING**
 - B.1. Presentation of 2015 FBC and Stoker Owners' Survey 1
Results and Benchmarking Results – **See Summary**
Jack A. Fuller, West Virginia University

- C. **New Energy ERA – Case Studies**
 - C.1. What Happens When a University Goes Through a Major Conversion? 12
Ronald (Ron) Rushing, Michigan State University

 - C.2. Responding to a Changed Energy Market with Solid Fuels: 15
The Continuing Saga!
Jeff Campbell, Scrubgrass

 - C.3. A Biomass Conversion 23
Robert (Bob) Morrow, Detroit Stoker Company

- D. **Operation and Maintenance**
John Malloy, Northern Star Generation, Moderator
- D.1 Polyamine Technology – Discussion and 42
Field Application Review
Leo Antony and Gregg Robinson, GE
- D.2 Induction Heating or Tube Stub Maintenance/Removal N/A
Tim Cartmel, The Babcock & Wilcox Company
- D.3 UPDATE – Perform Safer and Cheaper Boiler Tube Inspections 59
Jake Loosarian, Gecko Robotics
- D.4 Refractory Products 66
State of the Art of Refractory Products
Corey Forster, Harbison/Walker International
- E. **Boiler Repairs, Assessments and Tune Ups**
- E.1 Boiler Tune Up Compliance Requirement and 81
Documentation
Matt Dooley, Consultant
- E.2 Maximizing Unit Performance and Response on Biomass Fired Boilers N/A
Cameron Weir, Valmet
- E.3 Control System Upgrade Considerations (with examples) N/A
Rinol Pereira, ABB, Inc.
- F. Power Safety
Scott Churbock, Montrose Environmental Group, Inc. **N/A**
- G. Natural Gas Startup Experience (we wished we thought of that) **103**
Billy (Randy) H. Ransdell, Black & Veatch Corporation
- H. A New Reason for Boiler Modification – The Virtual Pipeline 108
David (Dave) Lavoie, NG Advantage LLC
- I. Overview of Low NOx Gas Burner Performance 114
New and Retrofit Conversions
Robert (Bob) Langstine, Zeeco, Inc.
- J. NOx Burners and a Low NOx Burner, Startup & Operations 148
Gilbert (Gil) Sy, Preferred Utilities

- K. Staffing the Future Powerhouse - Panel N/A
John C. deRuyter, Consultant – Moderator
- K.1 Training Isn't What it use to be 157
Mike Morin, NAPE
- K.2 Staff Training and Certification 172
Paul Kempf, The University of Notre Dame
- K.3 The Future of Operator Training 193
Bob Clarke, PanGlobal Training Systems Ltd
- L. CHP
- L.1 CHP tied to Meeting Thermal and Electrical Needs Insuring Plant Reliability and Cost Effectiveness in the New Energy ERA 205
Dale Louda, CHP Association
- L.2 CHP and NERC/FERC Implications 221
Guy G. Warner, Pareto Energy LTD
- M. Overview of Environmental Controls Operating Issues
- M.1 Living with your CEM
- M.1a** Case Study – Successful CEMS Upgrade for MACT 244
Brian Peterman, Sega, Inc.
- M.1b** Compliance Concerns with Monitoring Data and Calculations 230
Lauren Laabs, Mostardi Platt
- M.2 Living with your DSI System 259
Greg Filippelli, Lhoist North America
- N. Overview of Glatfelter on Their Operations 273
Darren Davis, Glatfelter
- O. Summary Discussion – See Conference Summary – Carl Bozzuto N/A
Gary Merritt, Inter-Power/AhlCon Partners, L.P.
Robin Mills Ridgway, Purdue University