



# Maintenance Solutions: Maximizing Maintenance and Lubrication Through Planning and Prediction

17-19 September 2018

DoubleTree by Hilton Hotel & Suites  
Pittsburgh Downtown  
Pittsburgh, Pa., USA



## Registration Includes

Registration includes breakfasts and lunches Monday through Wednesday, reception Monday and Tuesday, plant tour, and a course workbook or flash drive including presentations.

AIST Members	
US\$895	US\$995
by 6 August 2018	after 6 August 2018

Non-Members*	
US\$1,110	US\$1,210
by 6 August 2018	after 6 August 2018

## Hotel Accommodations

A block of rooms has been reserved at DoubleTree by Hilton Hotel & Suites Pittsburgh Downtown. Please call the hotel at +1.800.222.8733 by 24 August 2018 to secure the AIST discount rate of US\$139 for single/double occupancy.

## Company Discount

Three or more individuals from the same facility attending any one seminar can receive a 10% discount per person. All registrations must be received together along with payment to qualify for the discount. Not applicable with any other discount.

## Cancellation/Substitution

If you must cancel, please email or fax a notice of cancellation to skiley@aist.org or +1.724.814.3064, and a refund will be issued. Cancellations received less than two weeks prior to the event are non-refundable. If you would like to send a substitute, a new registration form must be faxed for that person, indicating the replaced person on the form. Be certain that the membership status is equivalent or note otherwise.

## Student Rate

The AIST Foundation is pleased to provide assistance to students interested in attending AIST Technology Training Conferences. Program details are available online at AIST.org > Students & Faculty, or contact Shannon Kiley at +1.724.814.3064.



## Featured Plant Tour

*PNC Park or U. S. Steel – Mon Valley Works, Edgar Thomson Plant*

## About the Program

The AIST Maintenance & Reliability Technology Committee, AIST Lubrication & Hydraulics Technology Committee and industry leaders have joined together for 2018 Maintenance Solutions: Maximizing Maintenance and Lubrication Through Planning and Prediction.

This workshop-based training seminar will provide attendees with hands-on instruction, tools, and the best available technologies for mechanical, electrical, lubrication, hydraulics, management system maintenance and reliability solutions. In addition, maintenance and outage planning, system design, and maintenance troubleshooting and techniques will all be covered. Manufacturing reliability is an integral part of sustainability in the metals industry. Improvement in reliability is essential to ensuring manufacturing results at the lowest cost. Both operations and maintenance personnel must understand the direction their organizations need to take with respect to improving and managing their equipment maintenance programs.

## Who Should Attend

The conference is intended for maintenance, operations and engineering personnel. It is useful for individuals who are in middle management or frontline supervisor positions, as well as maintenance, operational, and reliability personnel responsible for equipment reliability processes, including planners, schedulers, senior tradesmen, maintenance managers, maintenance engineers, plant engineers, project engineers, maintenance superintendents, operators and operations managers. Maintenance technology, equipment and service suppliers should also attend.

## Professional Development Hours

This course may qualify for up to 18.5 Professional Development Hour (PDH) credits. Each attendee will receive a certificate listing the quantity of PDH credits earned for the course. This course is not approved for PDH credits in New York, Florida, North Carolina and Oklahoma.

## Organized By

AIST's Maintenance & Reliability and Lubrication & Hydraulics Technology Committees.

## Sponsorship Opportunities Available

Please contact Shannon Kiley at +1.724.814.3064.





# Schedule of Events

## Sunday, 16 September 2018

4–6 p.m.  
Registration

## Monday, 17 September 2018

7 a.m.  
Registration and Breakfast

8 a.m.  
**Welcome**  
Ken Flowers, Butech Bliss

8:10 a.m.  
**Group Activity/Ice Breaker**

9 a.m.  
Break

9:15 a.m.  
**Safety and Reliability — Inseparable for a Reason**  
Randy Heisler, Life Cycle Engineering  
This presentation will describe the correlation between reliability performance and safety performance.

9:45 a.m.  
**Maintenance and Reliability — What Does Good Look Like?**  
Chuck Kooistra, Chuck Kooistra LLC  
The keynote presentation will provide an overview of maintenance and reliability best practices. This fast-paced presentation covers the best and the worst of the world of maintenance and reliability, and how to get started on the right track.

10:30 a.m.  
Break

10:45 a.m.  
**Reliability Achievement Award Overview**

10:50 a.m.  
**2018 Reliability Achievement Award Gold Winner**  
John Tessling, ArcelorMittal Indiana Harbor  
Working with a large set of historical data on an 80-inch hot strip mill, the ArcelorMittal team determined which loss-of-production incidents could be attributed to the downcoiler equipment, and established their root causes. Once average lifespans for the equipment could be satisfactorily established, upgrade projects brought the coil defect rate down to one-third of the original rate, in eight years, significantly adding a positive contribution to the annual operating budget in the

multi-million-dollar range. This project was accomplished by a team of 10 mill individuals and three subcontractors.

11:25 a.m.  
**2018 Reliability Achievement Award Silver Winner — Improvements of Self-Maintaining Air Cleaners**  
Jared Handley, Nucor-Yamato Steel Co.

Nucor-Yamato Steel Co. completed a project in 2012 to pressurize and exchange air from the EAF transformer vaults. This project successfully utilized a high-efficiency dust collector to pressurize each transformer vault. The highly scrubbed discharge air has lowered the ambient temperature inside the vault and has maintained internal pressurization of each vault. The project has been hugely successful in lowering the potential for arc flashes and in reducing labor cost to clean the vaults and maintain the old conventional air filtration systems. Due to the success, similar systems have been installed in both ladle metallurgy furnace transformer vaults and in other applicable areas of the mill.

Noon  
Lunch

### Track 1:

1 p.m.  
**Practical Relationship of Vibration, Current Signature and Motion Amplification**  
Howard Penrose, MotorDoc LLC  
This presentation discusses the capabilities and limitations of three key testing and predictive maintenance technologies, and will include the relationship between the technologies with case studies.

1:50 p.m.  
Break

2 p.m.  
**Planning and Scheduling Success Factors**  
Ken Arthur, GP Strategies  
The factors needed to ensure success and return on investment from planning and scheduling improvement initiatives will be presented. This discussion centers on how those who succeed make it happen.

2:50 p.m.  
Break

3 p.m.  
**Hydraulic Pump Types and Failure Modes**  
Rob Sensel, Dover Hydraulics  
This presentation will review the basic types of hydraulic pumps and some of the common pump failure modes, as well as how to prevent failures.

# Schedule of Events (cont'd)

3:50 p.m.  
Break

4 p.m.  
**Basic Vibration Analysis and Beyond**  
Bob Miller, IVC Technologies

This presentation covers fundamentals of vibration analysis and more advanced methods with specific examples of their use with usable takeaways for all levels of experience in vibration analysis.

## Track 2:

1 p.m.  
**Lubrication Fundamentals**  
Salvatore Rea, LANXESS Solutions US  
This paper provides an introduction to the science of tribology (lubrication, friction and wear).

1:50 p.m.  
Break

2 p.m.  
**Choosing the Right Oil for Your Application – From Group I to V**  
John Schlobohm, American Chemical Technologies Inc.

2:50 p.m.  
Break

3 p.m.  
**Oil Analysis: Diagnosis, Decision and Response**  
Mark Shierman, The Fluid Life Corp.  
This discussion will focus on oil analysis and the workflows involved with responding to lubrication issues.

3:50 p.m.  
Break

4 p.m.  
**Choosing the Right Grease for Your Application**  
John Accurso, Quaker Chemical Corp.  
There are many types of greases; having the right grease can reduce downtime, reduce overall cost and increase productivity.

5 p.m.  
Reception

## Tuesday, 18 September 2018

7 a.m.  
Breakfast

8 a.m.  
**Plant Tour of PNC Park or U. S. Steel – Mon Valley Works, Edgar Thomson Plant**

Noon  
Lunch

1 p.m.  
**Roll Neck Bearing Installation and Maintenance**  
Rob Patrick, The Timken Co.  
This presentation will show the basic steps of installing and maintaining bearings in roll neck positions. This includes identifying the components and order, determining the spacer gap and proper setting, clamp-up and bearing load zone position.

2 p.m.  
**Hands-On Gallery**

- **Titan Bearings:** Several varieties of bearings
- **Dover Hydraulics:** Disassembled hydraulic components
- **American Chemical Technologies Inc.:** Demonstration gearbox using thixotropic grease
- **The Timken Co.:** Roll neck bearing components and chock example
- **Alloy Technology Solutions:** Hands-on troubleshooting and component failure analysis of rolling mill hydraulics, using mobile devices
- **Horsburgh & Scott:** Rolling milling gearing advancements

3 p.m.  
Break

3:30 p.m.  
**Roundtable Discussion and Reception**



# Schedule of Events (cont'd)



## Wednesday, 19 September 2018

7 a.m.  
Breakfast

### Track 1:

8 a.m.  
**Considerations for Safe Handling of Roll Neck Bearings**  
Mike Allega, The Timken Co.  
Overview of suggested lifting practices and introduction to below-the-hook design standards, with a brief overview of historical lifting devices in use today that do not meet lifting safety standards.

8:50 a.m.  
Break

9 a.m.  
**Bearing Basics and Alternative Solutions**  
Jeff Blankenship, MRSI  
This presentation will review bearing fundamentals and focus on bearing failures and alternative solutions to steel mill applications.

9:50 a.m.  
Break

10 a.m.  
**Burner Box Reliability**  
Kyle Tew, Steel Dynamics Inc. – Structural and Rail Div.

10:45 a.m.  
Break

11 a.m.  
**Butech Bliss Apprentice Program**  
Noel Mackenzie, Butech Bliss  
Butech Bliss has introduced an apprentice program at its manufacturing plant and is working with other local companies to make it successful for today's workforce.

### Track 2:

8 a.m.  
**Automated Lubrication Systems in the Steel Industry**  
Jason Craft, DropsA USA  
This paper will explain the function of the two most used systems in the steel plants — series progressive and dual-line systems — how they work and troubleshooting.

8:50 a.m.  
Break

9 a.m.  
**Air-Oil Lubrication: Further Analysis of a Growing Technology**  
Saif Sheet, Hastec Engineering Inc.  
Course provides a moderate to high working knowledge of air-oil systems, components and troubleshooting tips, as well as a description of applications where the technology has been applied successfully.

9:50 a.m.  
Break

10 a.m.  
**Hydraulic Fluids: Types, Properties and Performance**  
John Sherman, American Chemical Technologies Inc.  
The presentation will review general hydraulic fluid types and how they differ in property and performance based on their viscosity grade, base stock type and additive package. Specialty hydraulic fluids used in steel manufacture, including fire-resistant hydraulic fluids, will be emphasized. New hydraulic fluid types that may find use in steel manufacture will be mentioned, as well as trends and changes ongoing in the evaluation of fire-resistant fluids.

10:45 a.m.  
Break

11 a.m.  
**Hydraulic Fluids: Test Methods and Condition Monitoring**  
Salvatore Rea, Lanxess Solutions  
This presentation provides an overview of the different hydraulic fluid types. The test methods commonly used to assess and monitor the "health condition" of these fluids will also be covered.

Noon  
Conference Adjourn

