

2025 WRBA Presentation Topics

1. **Columbia Water Technology:**

“Particulate Interference and Treatment Within a Recirculating Cooling Water System”

Greg McGiffney

In a recirculating cooling water system, many factors are involved in developing a successful treatment strategy. Particulate interference models are important, yet often are overlooked when attempting to gain a thorough understanding of factors inherent in the application of the best available technology for these systems. Several alternatives are available and will be discussed to address this issue, a combination of which will allow a typical end-user to attain success.

2. **Nationwide Boiler:** *“A Deep Dive into Deaerators”*

Scott Best

Generally, deaerator selection and sizing is given careful consideration when initially purchased or replaced, but is often given little attention after it's installed and commissioned. Of all the auxiliary equipment that supports the boiler, the deaerator may be the most impactful but is often operating far outside of its optimum range of pressure, temperature and/or capacity. This may affect the efficiency, longevity and responsiveness of not just your boiler, but your entire steam system.

This session is designed to help operators and facility managers understand the purpose of the deaerator and how to apply best-practices to ensure it is providing the best possible performance.

Learning Objectives:

In this session we will cover:

1. Why deaerate boiler feedwater.
2. Deaerator principles of operation.
3. Pegging steam and the magic of the saturation point.
4. High pressure condensate and its potential impact on energy balance in the deaerator.
5. Feedwater pumps and Net Positive Suction Head (NPSH).
6. Overflow capacity vs. working capacity.
7. Deaerator types.
8. Deaerator monitoring, maintenance and troubleshooting.

3. **Curtiss-Wright:** *“Engineered Tube Plug Solutions”*

Danko Kobzia

There are several tools and techniques that should be in a System Engineer's and Maintenance Manager's toolbox of solutions. It's important to have an understanding of the problem and the solutions at hand before reaching into the toolbox for the correct tool.

4. Detroit Stoker Company: “Preparation & Execution of Grate Inspections and Repair outages”
Nate Wickenheiser and Bob Morrow

The presentation is to include discussion of planning and executing grate repair work. Topics will include:

- Schedules & Planning
- Tools and Manpower requirements
- Safety related considerations – LOTO, Toolbox safety discussions, pre-hazard assessment
- Collaborating with multiple contractors
- Traveling and vibrating grate inspections points and considerations
- Recommendations for over-grate scaffolding
- Completion aspects – housekeeping, final inspections

5. Victory Energy: “Enhanced Heat Recovery with Condensing Economizers”
Bryce Davis

Learn about enhanced heat recovery with condensing economizers and how this technology boosts energy efficiency and drives industrial decarbonization. This presentation will highlight how condensing economizers recapture heat from flue gases, reduce fuel consumption, and minimize emissions. By cooling gases below their dew point, condensing economizers recapture latent heat, boost efficiency, and reduce operating costs. Three key studies will be discussed in which condensing economizers were used to produce real, measurable results in industry.

6. Xylem/Evoqua: “A Practical Review of Water Reuse Technologies and Strategies”
Marcus Cole

We are seeing an increasing number of customers reaching out looking for ways to reuse water in their facilities. We lay out some practical aspects and technologies to achieve reuse.

Reuse can include:

- Tertiary treated wastewater
- Once through cooling water
- Collected storm water runoff
- Cooling Tower Blowdown
- Boiler Blowdown
- Reverse Osmosis (RO) Reject
- Process Condensate
- Stripped Sour Water
- White water purge
- Purge Treatment Unit

Water reuse/energy reduction = \$\$\$

7. Applied Control: “Preventative Maintenance for Control Valves”
Amber Graviet

Control Valves are a critical asset to any Boiler and there are signs to be aware to understand the health of your valve. The presentation will cover:

- What defines a control valve and how should a control valve ideally operate?
- Do you have the right type of valve installed?
- Proper installation of a control valve.
- Importance of Calibration during downs and PM schedules.
- Basic Troubleshooting and basic diagnosis of root cause.

8. Babcock and Wilcox: “Industrial Package Boilers – Design Considerations for New Boilers and Hydrogen Firing Potential”
Stephen Dutkiewicz

This presentation will cover design considerations for new build package boilers including transportation logistics, emission requirements, fuel selection, boiler construction, and scope considerations. The presentation will also provide some general guidance when considering hydrogen firing as part of a new boiler project or retrofitting an existing unit.

9. Nalco Water: “Boiler water tools for accelerating solutions”
Scott DiGirolamo and Luke Avetian

How online sensors and data collection points within the boiler can be combined to create a real time view of how the boiler system is doing and how to track changes in the boiler. How to combine multiple online sensors to create a better image of the boiler system than each sensor in a standalone configuration.

10. Integrated Global Services: “Efficiency and Reliability Solutions”
Pete Castiglione and Eric Church

We will be covering corrosion and erosion mitigation with the use of High Velocity Thermal Spray (HVTS) in Recovery Boilers, Power Boilers, Digesters, and Evaporators.

1. Quick company intro
2. Benefits of HVTS
3. Review of HVTS application best practices
4. Components/Equipment that we can spray
5. Engineered materials designed specifically for HVTS to mitigate corrosion and erosion

11. Spartan Controls: *The Greenest Fire: Combustion with Hydrogen (H2) fuel*
Nikhil Nagpal

Hydrogen is a versatile and unique energy carrier that will play a significant role in decarbonization of our energy systems, while also enabling sustainable economic and environmental benefits. Today Natural gas is one of the most common gaseous fuels used for industrial combustion, where the properties of Natural gas differ vastly from Hydrogen presenting some challenges. The goal of this presentation will be to discuss the basics and key design considerations when thinking about using Hydrogen as the combustion fuel for fired equipment (such as Boilers, Heaters, etc.). We will also attempt to demystify many of the industrial concerns around Hydrogen Firing and why this presents the opportunity for 'greenest' fuel firing

12. AirStream Systems: “*Fan reliability and vibration analysis*”
Andrew Webster

Machine reliability and vibration are closely related. The importance of this subject cannot be understated as unscheduled downtime is very costly. This presentation focuses on reliability and vibration analysis of large ID fans in boilers and kilns; however, the material is applicable to all machines (pumps, compressors, conveyors etc.). This session will cover:

1. History and Importance
2. Vibration principles
3. Sources of vibration, modes, and natural frequencies in fans.
4. Fast Fourier Transformation (FFT)
5. Transducers
6. Antifriction bearing fault frequencies
7. Diagnosis

13. ProcessBarron: “*Backpressure steam turbine generators*”
Bill Hunter

Efficiency benefits of a backpressure steam turbine generator. Backpressure steam turbine generators are the most efficient traditional power generation device. They have the benefit of using steam twice, allowing power production at half the heat rate of a combined cycle power plant. Their cost of installation is half that of a combined cycle power plant, offering a 4x benefit over a combined cycle power plant, the primary traditional power generation plant