

**WESTERN REGIONAL BOILER ASSOCIATION**  
**Meeting Minutes - March 12, 13, 14, 2013**  
**45<sup>th</sup> Annual Meeting**

**Tuesday, March 13, 2013**

**Introduction of Attendees and Board of Directors**

John Boyd, WRBA Secretary and Steering Committee member, gave the opening welcome speech and thanked Scott Anderson, WRBA President, for putting together the conference and logistics. Following the welcome:

- Individuals introduced themselves.
- A name change at WRBA (non-profit) from the Steering Committee to Board of Directors is in process. An offer was made to the attendees to join the club, emphasizing there will be future retirements from the Board of Directors.
- Feedback provided by attendees to WRBA members is in favor of shorter presentations and longer break times allowing attendees to spend more time in the vendor room.

Lisa Harvey-Boyd, WRBA Executive Assistant, introduced herself, and asked for a headcount of the Spirit Cruise attendance. A sign-up sheet was passed around the room.

Jack Hinman, WRBO Steering Committee Treasurer discussed the following:

- Purpose of conference is to meet once a year to share information and promote safe efficient operations

**Financial Report** – WRBA is a non-profit organization.

- Total amount currently in account is \$77,170
- Paul Prescott, Steering Committee member passed away in 2011. WRBA Board of Directors created a Paul Prescott Memorial Scholarship fund and will contribute a couple of scholarships for steam and power students.

**Legal Presentation** – No items reported

Jack Hinman introduced presenters throughout the conference

Scott Anderson held drawings for prizes (WRBA and Vendor, and provided conference logistical information at each break).

**Tuesday, March 13, 2013**

**Presentation #1: Bob Morrow – Detroit Stoker Company**

**[Biomass combustion systems technologies](#)**

**Topics:** Mr. Morrow explained the Environmental Committee conference he attended last week in Washington, D.C. as follows:

- Start-Up, Shut Down, and Malfunction (SSM), Evolution of SSM – MACT, 2011 Reconsideration, 2013 Final Rule Work Practice, and Missed ESP's 100%.

Additional topics included Detroit Stoker Company domestic projects mainly being retrofits (reliability/availability), Cake and Syrup Trails, Emission Controls, Combustion Technologies (comparisons of BFB vs. Grate combustion), Existing Unit Comparison, and commented hybrid suspension grate comes from sugar. Mr. Morrow provided information on the CIBO Conference in May 2013 (see Mr. Morrow for draft agenda). No questions were asked.

**Presentation #2: Craig Thiry - The Avogadro Group, LLC**

**[Impact of recent EPA regulations to source testing field and the associated impacts to industry](#)**

**Topics:** New Source Testing Regulations (*different test methods can = different results*), Recent regulation and ASTM acronyms, Purpose of QSTI/QSTO and main components, Purpose of accreditation, *Status 3/12/13*: 21 companies with STAC interim or full accreditation, Protocol Gas Verification program (PGVP/AETB), Stationary Source Audit program (SSAP). Mr. Thiry emphasized importance of hiring tester/asking questions if they know new and old methods and stated new methods are coming soon (provided examples), Professionalization of testing being implemented, Particulate matter (primary and secondary), Test methods (old, new, and results), New method more expensive/some regulators accept it while some do not. No questions were asked.

**Presentation #3: Rob Haney – Crane Environmental / Frost Engineering Service**

**[Water treatment basics for power engineering](#)**

**Topics:** Steam Loop, Contaminants, and Removal for introduction to steam boiler, Typical water contaminants (ground, municipal, brackish & ocean), Basic water chemistry is very important (slide #7), Industrial water trains (1<sup>st</sup> type - multimedia filtration/depth filters, 2<sup>nd</sup> type – multimedia filtration alternatives, which are more expensive, ultrafiltration (UF), iron removal media filters, Birm/KDF filters, manganese Greensand filters), Activated carbon filters (advantages & disadvantages) Granulated activated carbon (GAC), Water softeners (ion exchange softening). Types of water softeners: Chemical dosing and types, Reverse osmosis fundamentals and terms (very effective), Spiral wound RO elements, Anatomy of RO system, CE RO-Centric design and common optical features, CE RO-Centric design: post treatment and ultra-pure applications, preferred application - electrodeionization (EDI), Deaeration, Reasons for treating boiler feeder water, Post RO blow-down calculation

**Presentation #3: Rob Haney (continued)**

**Question:** *Can waste water be reintroduced?*

**Answer:** *Yes, by double-pass or triple-pass RO's and suggested talking with engineer to discuss specific situation.*

**Presentation #4 – Frank Neil, Jr., TesTex**

**Improving boiler reliability through NDT**

**Topics:** Keys to improving boiler reliability, Water wall, Super heater, Reheater inspections, Available inspection technologies, LFET (rapid detection tool), TS-2000 scanning system and advantages, Typical defects found in TS-2000, LFET scanning and reporting, Various scanners (BEND) and low profile, Case studies and examples, Details needed for successful inspection and keys to success. No questions were asked.

**Presentation #5: Kevin Tangen, Rebecca Knecht - Evergreen Engineering, Inc.**

**Construction and maintenance management for shutdowns and utility outages**

**Topics:** CMS definition, CMS example projects (greenfield, retrofits, critical staffing), Outage and shutdown management, Schedule management, Follow-up reporting. Conclusion: Scalability, duration, staff size, value-added services. No questions were asked.

**Board of Directors Meeting:**

Jack Hinman invited attendees to join meeting, Jack has all presentations except Karen Person who will present first on Wednesday, Jack to ensure meeting room locked at night, Scott to make announcements on Wednesday regarding where to board Spirit cruise and remind attendees to bring ticket, 3 people can board Spirit early for set-up, organizing prizes, and DJ. Prizes – 10 gift cards, member with most money end of night wins iPod, Attendance headcount ~75.

**Reception and Dinner**

**Wednesday, March 13, 2013**

**Presentation #6: Karen Person - GE Water and Process Technologies**

**Film forming polyamines for full system boiler corrosion protection**

**Topics:** Polyamine technology, Key differences between polyamine and traditional neutralizing amine technology, Potential benefits, Polyamine performance evaluations (papers available to attendees for review), Polyamine corrosion performance, Reviewed lab simulations, Polyamine corrosion evaluation, Polyamine volatility and distribution, Oxygen scavenger compatibility, Applications case study, Additional applications.

**Presentation #6: Karen Person (continued)**

**Question:** How often can polyamine be injected into DA (continuous or one time)?

**Answer:** Continuous, or not that frequent. Dosing procedure of minimum rate required to maintain typical deposition.

**Question:** Will high pressure cause turbine damage?

**Answer:** Ammonia/polyamine blend got the level down to 1.2.

**Research:** High levels of iron formed.

**Presentation #7: Edmundo R. Vasquez, Ph.D. / Dennis Shanahan**

**Clyde Bergemann Power Group**

**How improving combustion can reduce MACT air pollution control footprint investment and operating costs**

**Edmundo R Vasquez, Ph.D. presented [Maximum Achievable Combustible Technology](#)**

**(MACT)**Project Goal: Begin with the end in mind, Boiler

MACT Facts: Emission limits, Existing units, Solid fuels

**Topics:** Biomass combustion (ash formation), Combustion products, Gases and gas pollutants, In-furnace emission control technologies, Stacked air systems (conventional over-fire air system, CBAM stacked air system), Combustion modifications impact on APC technologies, Clyde Bergemann stacked air system schematic (being build, projected installation July 2013), Clyde Bergemann windbox nozzle, positioned and components, SAS modifications

**Case study:** Interlaced vs. SAS, SAS reduces excess O<sub>2</sub>, CO reduction, Reduction in boiler exit gas temperature

**Dennis Shanahan presented SAS Impact on ESP Design**

**Topics:** ESP inlet design parameters, Boiler / Fuel type impact on ESP, ESP operating conditions and flue gas, Flue gas and particulates design inputs, ESP outlet requirements, Technology CBPG rigitrodes, CBPG collecting plates and rigitrodes, Rigitrode electrodes, Collecting plate rapping, RD 3000 automatic voltage controls, APC performance case study, Flue gas and combustion air, ID and FD auxiliary power savings, ESP - SAS economic analysis, Conclusions for ESP impact, ACI – SAS performance analysis, DSI-SAS performance analysis, Conclusions for ESP, ACI, and DSI impact

**Question:** Is there any nozzle design erosion?

**Answer:** None. Worldwide, 40 installations with no problems on wall condition

**Question:** What happens when lowering O<sub>2</sub> and increasing heat?

**Answer:** It will burn properly

**Presentation #8: Rudy Steur, Online Cleaning Services**

***Utilizing the online linear blasting technologies in boilers***

**Topics:** Initial performance claims, Process (reviewed all the steps of cleaning boiler), Logistics requirements, video presentation of process (before, during, and after), References.

**Customer example:** Rudy presented the following about the process at Marion, a customer of 6 years: fouling cycle, boiler schematic, cleaning requirements, observations, and moving forward.

**Question:** Can the camera be left in place during process?

**Answer:** No, the camera would be destroyed.

**Question:** Is there an emissions hike during process?

**Answer:** No, unless the boiler is in very bad condition.

**Presentation #9: Mark Plafcan / Tom Cabezut – Westchem, Inc. / LAKOS**

**Filtration and zero blow-down in a cooling system: quit cooling dirt!**

**WCTI presentation and Introduction**

**Topics:** RFP operating history, WCTI features, Effects of scale on energy usage, WCTI inspection (tower fill) after 18 months, System performance and financial costs/savings, LAKOS inspection, LAKOS separators for cooling towers, LAKOS separators maximize cooling capacity, video of process presented, benefits of a clean tower, Result (maximize heat transfer efficiency), Summary of WCTI program and LAKOS separator system. No questions were asked.

**Presentation #10: John Zora / John Marone - Nalco**

***Expanding existing technologies to meet operational objectives. Essential expertise for water, energy, and air.***

**Meeting Operational Objectives for your Boiler House – John Zora**

**Case Study:** Boiler Cycle Control: Roseburg Forest Products and PGE Coyote Springs AUX Boiler (presented graph of cycle)

**Case Study:** Automated amine feed / control (Roseburg Forest Products (presented graph cycle).

**Operational Efficiency – John Marone**

**Topics:** KPI visibility generates opportunities for efficiency gain in bio-mass fired steam plants, Boiler efficiency (many variables), Grab Sample Trending (tedious and feedback after the process takes place) as opposed to Automated System Report (which provides better and more usable data), What is company measuring, i.e., fuel moisture, Available Tool (plant model and map which provides information on financial impact to plant). No questions were asked.

**Lunch, Bonneville Dam Tour, Dinner and Entertainment – Portland Spirit Vessel**

Thursday, March 14, 2013

**Presentation #11: Frank DeSilva / Steve Foor – Loprest Water Treatment Company / Resin Tech**

**[Ion exchange](#)**

***Troubleshooting Water Softeners***

**Topics:** Troubleshooting chart, Ion Exchange Softening, Steps to Troubleshooting (gathering data, creating a model, comparison of model against real world results, decision about changes, evaluation & follow-up), What do we need to know?, Basic data about the system, Create a model, What (if anything) is really wrong?, Types of problems, Why differentiate, Why construct a model, Study the model, Make a list, Decide what to suggest, Follow-up, Monitoring performance softeners, Resin sampling and testing results, Softener troubleshooting

**Question:** If resin is hydrated when it is received, should it be frozen?

**Answer:** No, it should be brought indoors and allowed to thaw out. If resin has been repeatedly frozen, it becomes damaged. Note: If resin dries out, it can be rewet by adding salt/brine.

**Presentation #12: Jim Mitchell – Plastacor, Inc.**

**[Use of coating for maintenance and life extension for condensers](#)**

**Topics:** Specific heat exchanger / condenser applications, Tubesheet problems (provided examples), Environmental control equipment and steps, Tube-end problems and examples, Full length tube problems, Objectives for tube coatings (Goal: Apply one coat, keep it thin, and manage tube inventory), Sealing pits and holes, Tube coating specifics, Before and after examples, Characteristics of the tube coating, Case studies, actions taken, and results, Elements of quality (challenges to a consistent outcome), Water boxes, Flange sealing, equipment packages. If anyone has question, Jim asked attendees to stop by Plastacor booth.

**Presentation #13: Eric Albright – Environ**

**[Major sources boiler MACT](#)**

**Boiler MACT & Related Rules**

**Topics:** Clean air act rules recently finalized, NESHAP (**National Emissions Standard for Hazardous Pollutants**): Definitions (major source boiler MACT applicability and exceptions), Fuel categories (gas, liquid, solid), New and existing units, Major sources boiler compliance dates, Emission limits, Work practice standards, Initial compliance demonstrations (existing and new), Continuous compliance, Operating limits, Initial notifications and reporting, Record keeping (5 years total, 2 years onsite – electronic is ok, 3 years offsite), Area source rule applicability and exemptions, Area source rule requirements, Area source compliance dates, Tune-up for area source boilers, Energy assessments overview and requirements

**Presentation #13: Eric Albright – Environ (continued)**

**Question:** How do I establish operating limits?

**Answer:** It depends on operating system, and needs to be on a rolling average. Eric suggested checking test methods in Rules.

**Question:** Is there a default limit?

**Answer:** Eric suggested checking test methods in “Rules”.

**Non-Hazardous Secondary Materials rule (NHSM):**

- Original 2000 CISWI Rule, Final CISWI Rule
  - Demonstrate compliance by February 7, 2016

**Topics:** Processing NHSM, NHSM legitimacy criteria

**Question:** What are the demolition criteria?

**Answer:** C&D legitimate rule is listed on website

**Question:** If fuel is developed onsite using harvesting and logging of wood be in compliance?

**Answer:** Yes, it is in compliance because it is under your control.

**Presentation #14: Desmond Smith – West Salem Machinery**

**Feedstock Diversity Drives Machinery Development at WSM**

**Topics:** Where is fuel coming from? (traditional, municipal, agriculture), Significant growth area (wood pellets, agricultural wastes), Types of equipment needed, Industries served.

Case History 1: Pellet plant Case History 1A: Industrial pellet plant

Case History 2: Mulch operation Case History 4: Green waste recycling

- New designs that make a difference:
  - Screening high capacity
  - Energy efficient
  - Wear resistant

No questions were asked.

**Presentation #15: Mark Peterson – Bay Valve Service LLC**

**[Steam system condensate drainage and stall conditions](#)**

**Condensate Drainage**

**Topics:** Demonstrated steam powered condensate and steam trap/gauge, Equipment drainage and system stall, Normal drainage, Equipment drainage, Stall and stall solution, Cause of problems and solutions, GP10 pump application, Heat exchange

**Comment:** Steam is an efficient transfer of heat

No questions were asked.

***General Discussion:***

John Boyd, WRBA Secretary, presented slides of the new NIPPON Paper facility under construction in Port Angeles, WA.

Lisa Harvey-Boyd described Port Angeles and the surrounding areas to provide information to attendees of the WRBA Conference 2014.

- Port Angeles is located near a rain forest that is considered the wettest place in the Continental U.S., while Port Angeles is very temperate
- There are several wineries in the Port Angeles area
- Victoria, Canada, BC, is accessible by several ships daily and is approximately a 2 hour ride (if you're interested, remember to bring a passport)

**The 2014 WRBA Conference will be held on March 11, 12, 13, 2014, in Port Angeles, WA**

Lisa thanked all of the suppliers and the Steering Committee members (John, Jack, Scott, Ron, and Lisa) for putting together the conference.

If anyone has suggestions, comments, or ideas, please leave them on the WRBA website.

**Vendor and Grand Prize Drawing wrapped up the conference  
Attendees were invited to join the Steering Committee meeting after lunch**