



# THE INSPECTIONEER POST

*Fueling the Minds of Electricity*

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## Special points of interest:

- Proper inspection preparation.
- Fundamental building blocks for performing a High Temp Reheat Inspection.



## INSPECTION PREPARATION AND PROCEDURES FOR HIGH TEMPERATURE REHEATER CIRCUITS

The action of performing an efficient, consistent, thorough, and cost effective inspection on a high temp reheat circuit starts with a few fundamental building blocks:

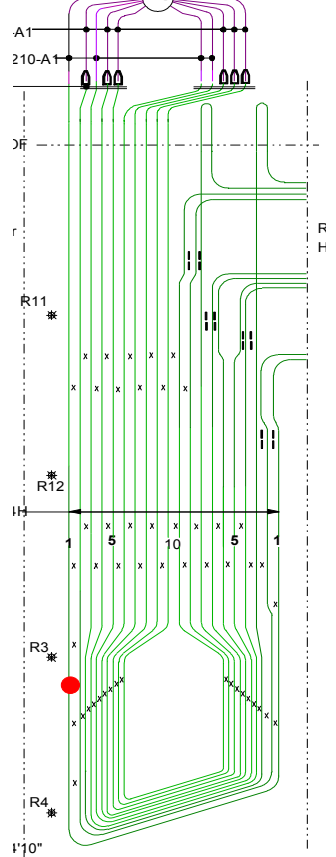
- 1) Proper research on component failure history
- 2) Proper preparation of inspection team
- 3) Utilizing the proper equipment to perform inspections
- 4) Taking the time necessary to perform the inspection
- 5) Understanding the high priority areas within the component
- 6) Understanding ID concerns as well as OD concerns
- 7) Understanding tube metal temperature ranges
- 8) Utilizing a set criteria and holding firm to the guidelines
- 9) Understanding priority assignment

The current environmental concerns and loss of energy demand nationwide have changed the playing field that we are used to dealing with in regard to component inspections.

**By following the fundamental tools illustrated in this post, you will be able to maximize efficiency and optimize the operation of the high temp reheat circuit.**

The key is to maximize your effort utilizing minimal resources. The more efficient you become, the more resources become available to be utilized on remaining high temp as well as low temp components throughout the boiler. Understand and utilize the fundamental building blocks listed, and take your time to perform the best component inspection possible.

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## BIOMASS CONCERNS

Biomass has been the focus of many conversations within our industry over the last few years.

Questions raised include:

**Can we meet load burning biomass?**

**If we can get it to work, how**

**much storage space would it require to operate on 100% biomass?**

**Will our existing coal feeding equipment, including mills require upgrades to handle the biomass material?**

All of these questions seem to

circulate across the industry.

Many utilities have experimented with biomass blending, and others have attempted complete biomass burn to see if load could be maintained and would be sustainable.

The BTU heat release for biomass fuel in comparison to our conventional coal is substantially less. This heat release difference can be a source for potential problems within the boiler cavity during operation. Extensive research is recommended if Biomass is on the discussion board at your facility.

Visit on the web  
[www.udc.net](http://www.udc.net)

*The Name Behind The Flame*



## 16th Annual All Users Conference

Key West, FL

January 12–14, 2011

### Co-Existence

## Coal-Fired & Combined Cycle - Problems & Solutions

Casa Marina Resort

1600 Reynolds Street

Key West, FL 33040

888 318-4237



#### UDC promotes recycling...

Recycling utilizes materials which would otherwise become waste and turns them into an opportunity to be a valuable resource. Collecting used bottles, cans, and newspapers and taking them to a collection facility generates financial, social, and environmental returns. In our break room we collect aluminum cans for recycling. We also return empty printer toner cartridges in an effort to promote recycling. Our environment benefits when everyone does their part to pitch in and recycle the things we can reuse and preserve.

#### Recycling ...

- Reduces the need for land filling and incineration
- Prevents pollution from the manufacturing of products from virgin materials
- Saves energy
- Decreases emissions of greenhouse gases that contribute to global climate change
- Conserves natural resources
- Sustains the environment for future generations



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#### Some tips on things to look for during your High Temp Reheater inspection:

- 1) Misaligned tubes and/or elements (record severity of alignment concern)
- 2) Bowed tube sections (Record greatest point of deflection)
- 3) Alignment clip integrity (Record cracked and/or fatigued clips)
- 4) Verify alignment clip material
- 5) Inspect for soot blower erosion on all tubes that can be affected by the soot blowing steam pattern (record all damaged tubes including a remaining wall thickness)
- 6) Inspect for fly ash erosion at all pertinent locations throughout the circuit, pay close attention to the roof intersection as well as crossover intersections (Record all damaged tubes including a remaining wall thickness)
- 7) Inspect all circuits for long term and short term overheating indications (Record any discoloration, tube swelling, exfoliation, and/or cracking present at these locations)
- 8) Inspect all DMW's if present for integrity and percentage through wall if cracked, pay close attention to the last 2 feet of material up stream just before a material family upgrade (Record percent through wall, and tube material condition before the transition)
- 9) Inspect for abrasion/fretting of tubes that intersect each other (Record abrasion location with a depth of wear)
- 10) Inspect damaged shielding members for holes and overheating. A hole in a shield located within a soot blower path may cause more harm from channeled erosion than having no shield at all (record shielding location and length).

**The 10 preceding recommendations listed are presented as tips for your benefit, and should be observed as an aid rather than your complete inspection plan. There are many inspection practices that have been proven effective, and items to look at in regard to inspecting your High Temp Reheater circuits.**



**Written By:**  
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