



Mcllvaine Hot Topic Hour



“Water Treatment Chemicals for Gas Turbine Combined Cycle Power Plants”

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- Chemistry limits developed for traditional industrial watertube boilers are not generally applicable to HRSGs
- Chemistry is unique due to:
 - Multiple pressure circuits in one casing
 - Complex flow patterns
 - Rapid cycling or fast start needs
 - Integration of cycles
 - Multitude of design options
- Selection of operating chemistry program needs to factor in unit specific design and operational aspects

Cycling and Fast Start Considerations

- Cycling service long associated with phosphate hideout problems
- Recommend considering AVT programs for cycling service + polishers
- Where aux boilers are used for holding vacuum, warming, etc.
 - Treatment program should match main cycle
- Fast start designs gaining in popularity
 - OEM chemistry requirements may be quite different than standard fare
 - No tolerance for old school chemistry holds
 - High purity system maintenance a priority



Challenges with ACCs

- Difficulties in cleaning
- Large surface area promotes iron transport particularly during restarts & load changes
- Air in-leakage potential
- Prone to FAC





Coping with ACCs

- Consider installing permanent condensate polishers
 - Precoat vs. Deep Bed
- Supplemental HP feedwater pH adjustment
- Use of amine blends with different vapor/liquid distribution ratios

HDR