

REINHOLD ENVIRONMENTAL Ltd.



2014 NO_x-Combustion Round Table & Expo Presentations

February 10 & 11, 2014, in Charlotte, NC / Hosted by Duke Energy

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DSI: Impact on Fly Ash and Wastewater

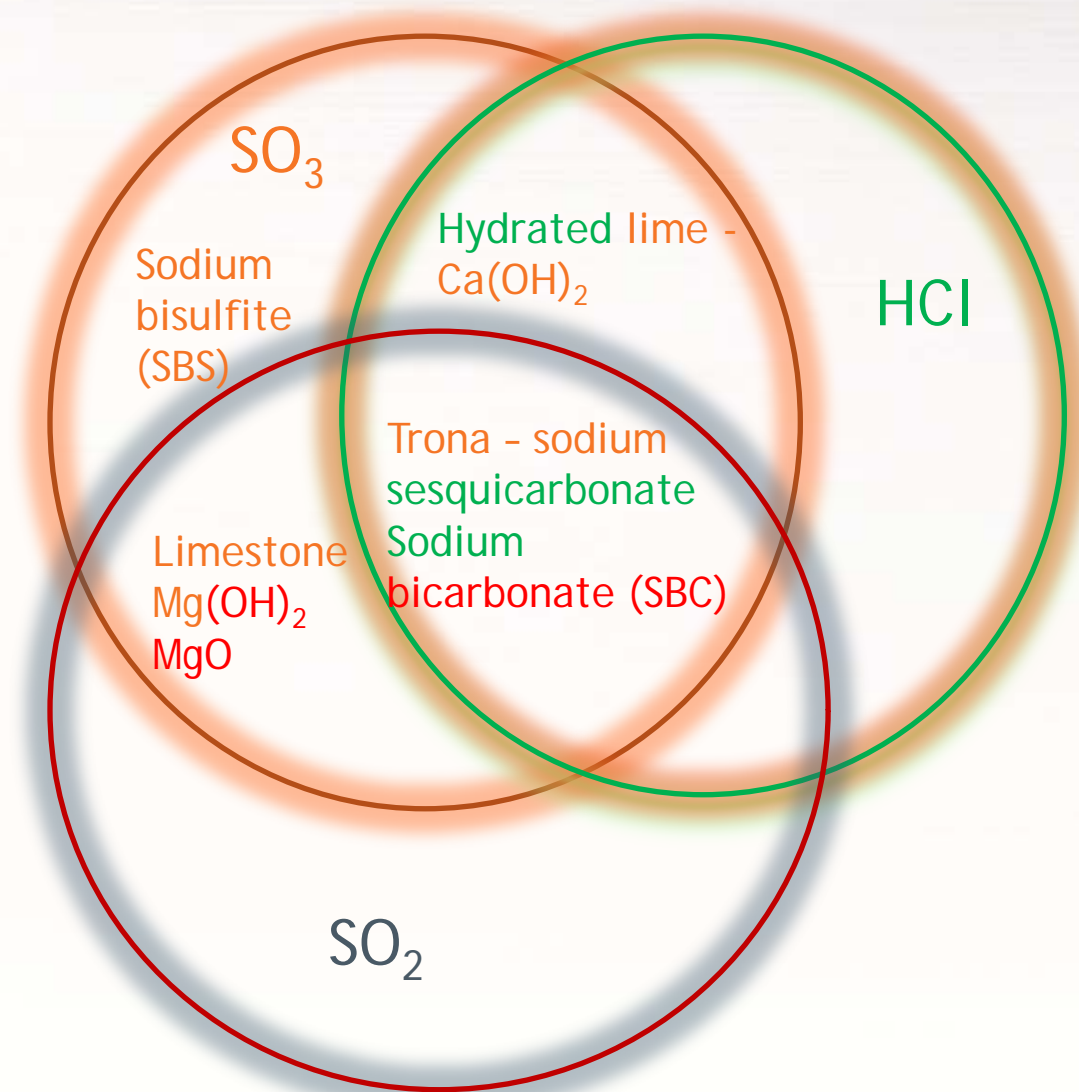
Connie Senior

NOx Roundtable Meeting
Charlotte, NC
February 10-11, 2014

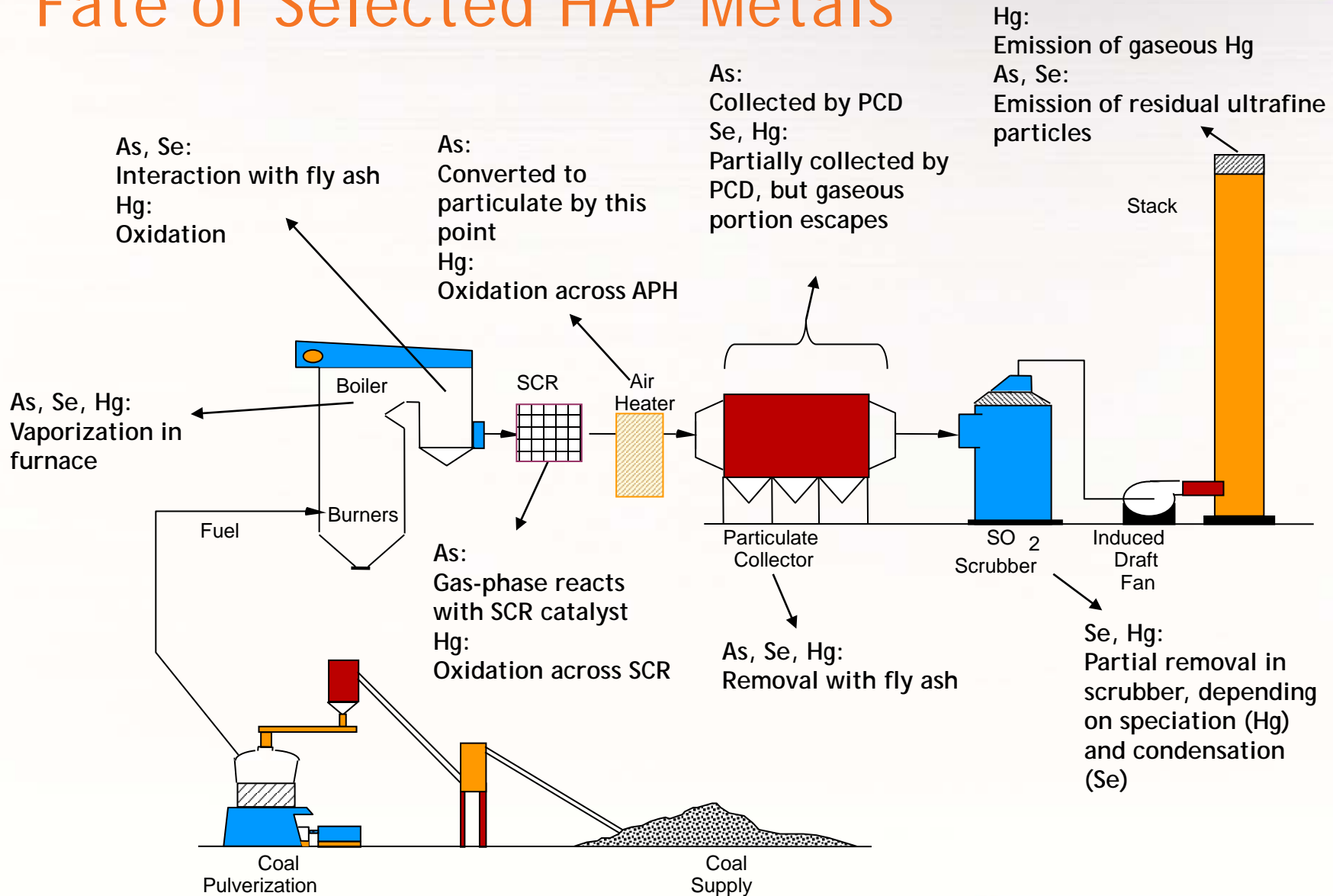
Participants

- ▶ Connie Senior, ADA-ES
- ▶ Panelists:
 - Curt Biehn, Mississippi Lime
 - Michael Atwell, Solvay
 - Howard Fitzgerald, L'Hoist

Sorbents for Acid Gas Control



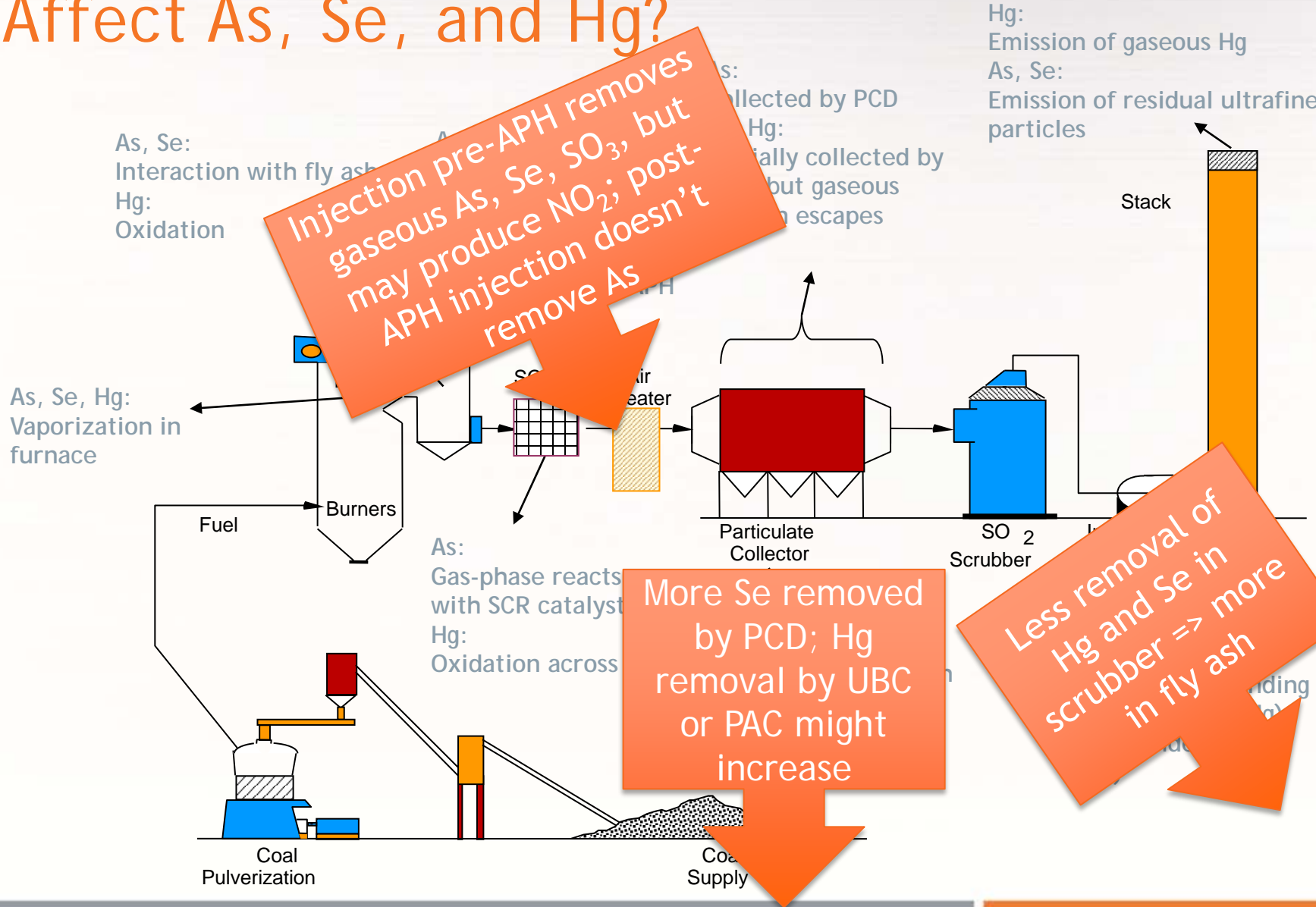
Fate of Selected HAP Metals



How Does Injecting DSI Sorbents Affect As, Se, and Hg?

- ▶ More Hg to fly ash, if more effectively captured by unburned carbon/PAC
- ▶ Native capture of Hg could be reduced with high-temperature injection of alkaline sorbents for SO₂ control
- ▶ More Se to fly ash, less to stack or FGD
- ▶ Leachability of As and Se in fly ash may increase, depending on type of DSI sorbent used

How Does Injecting DSI Sorbents Affect As, Se, and Hg?



Leaching from Ash-Sorbent Mixtures

▶ Trona injection

- Analysis of full-scale fly ash samples
- Significantly enhanced leaching of major anions of concern, including Se, As, Cr, and V but not Hg
- With trona addition, distribution of these anions shifted to the soluble trona fraction of the ash
- pH of bituminous ash leachate increased from ~7.5 to ~11 with addition of trona

▶ Hydrated lime injection

- Limited pilot data available
- Some increase in Se leaching (no other metals of concern), but small enhancement compared to trona