

Hot Hour Topic

New DeNOx Approaches

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New DeNOx Approaches

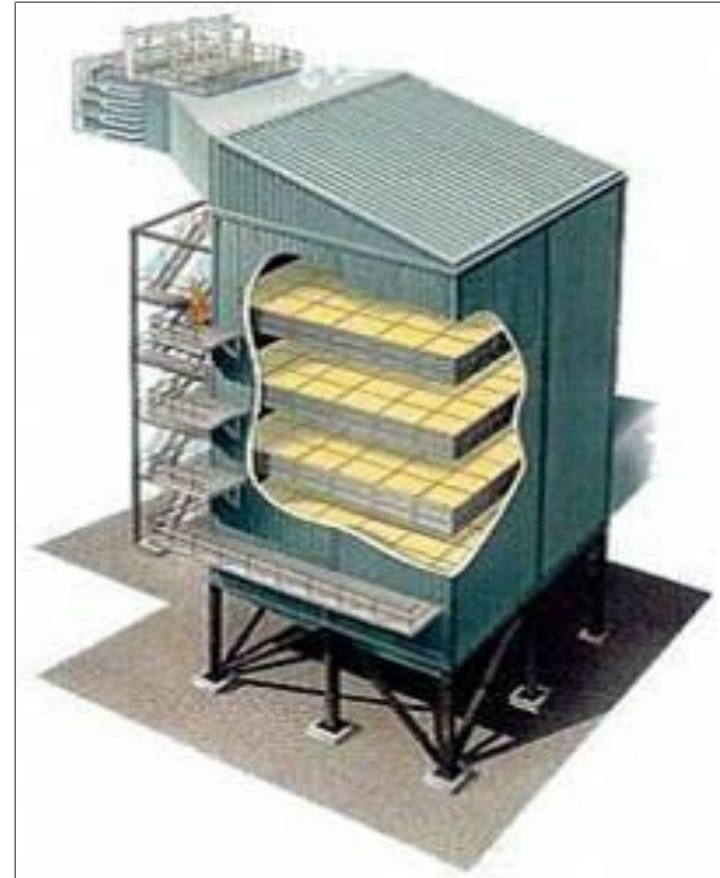
Meeting the World Energy Challenge.

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➤ **Balance**

➤ **Flexibility**

➤ **Mixed Layers**



Balance

➤ DeNOx versus:

- SO₂ conversion
- Pressure drop
- Hg oxidation



➤ Typical Evaluation Factors

- DeNOx K - \$50,000 to \$80,000 per 1 m/hr
- SO₂ conversion - \$150,000 to \$450,000 per 0.1%
- Pressure drop - \$120,000 per 0.1 inch water
- Hg oxidation – Normally none

SCR Converting to “Multi-Pollutant Reduction Reactor “MPRR”

➤ Regenerated catalyst

- Decayed catalyst removed from unit 1
- Cleaned based on received chemistry
- Regenerated for future unit operating conditions

➤ Brokering

- Option to sell catalyst that does not meet current operating requirements
- Purchase new or regenerated catalyst that meets current operating requirements

Think Outside the “SCR Box”

Why catalyst may not meet current operating conditions?

➤ Pitch

- Too small (pluggage, pressure drop)
- Too large (Low DeNOx potential)

➤ Catalyst Length

- Too long (pressure drop, SO₂ conversion)
- Too Short (Low DeNOx potential)

➤ Catalyst Type – Normally a customer specific preference

- Honeycomb
- Corrugated
- Plate



Consider different catalyst for different layers when pluggage is a issue!

➤ **Top Layer**

- Pluggage due to high ash volumes (especially boiler wall rows)
- Pluggage due to LPA
- Erosion resistance

➤ **Other Layers Balance**

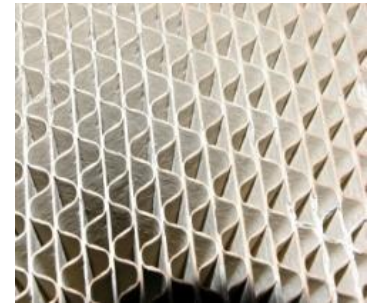
- DeNOx potential
- SO₂ conversion
- Pressure drop

Select the “Right” Catalyst for Each Layer

Mixed Layers

Consider different catalyst for different layers when cost versus performance is an issue!

- **DeNOx potential**
- **SO₂ conversion**
- **Pressure Drop**
- **Hg Oxidation**

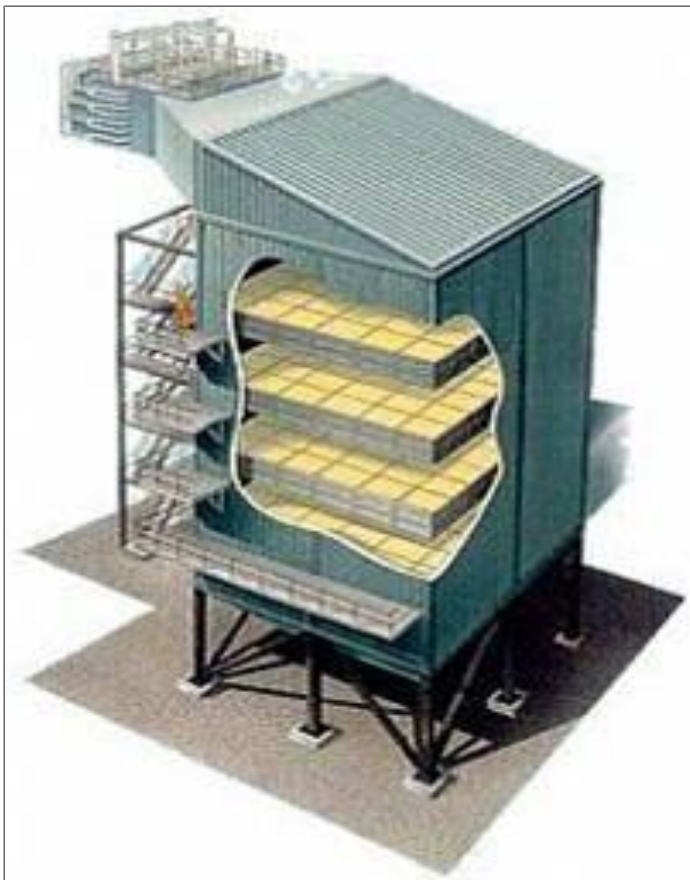


Mix Layers If It Adds “Value”

Summary

Meeting the World Energy Challenge.

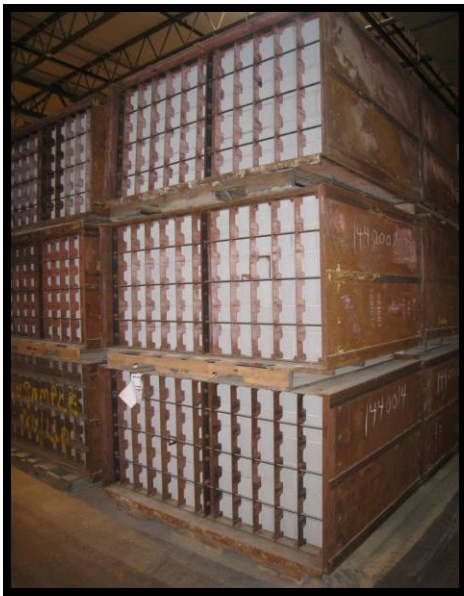
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- Think of the SCR as an “MPRR”
- Think outside the “SCR Box”
- SCR catalyst is an asset not a consumable
- Select the “right” catalyst for each layer
- Mix layers if it adds value

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Thank you,

Questions?

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