REINHOLD ENVIRONMENTAL Ltd.

2013 NOx-Combustion Round Table & Expo Presentations

February 18 & 19, 2013, in Salt Lake City, UT / Hosted by PacifiCorp

…Over the Past Decade

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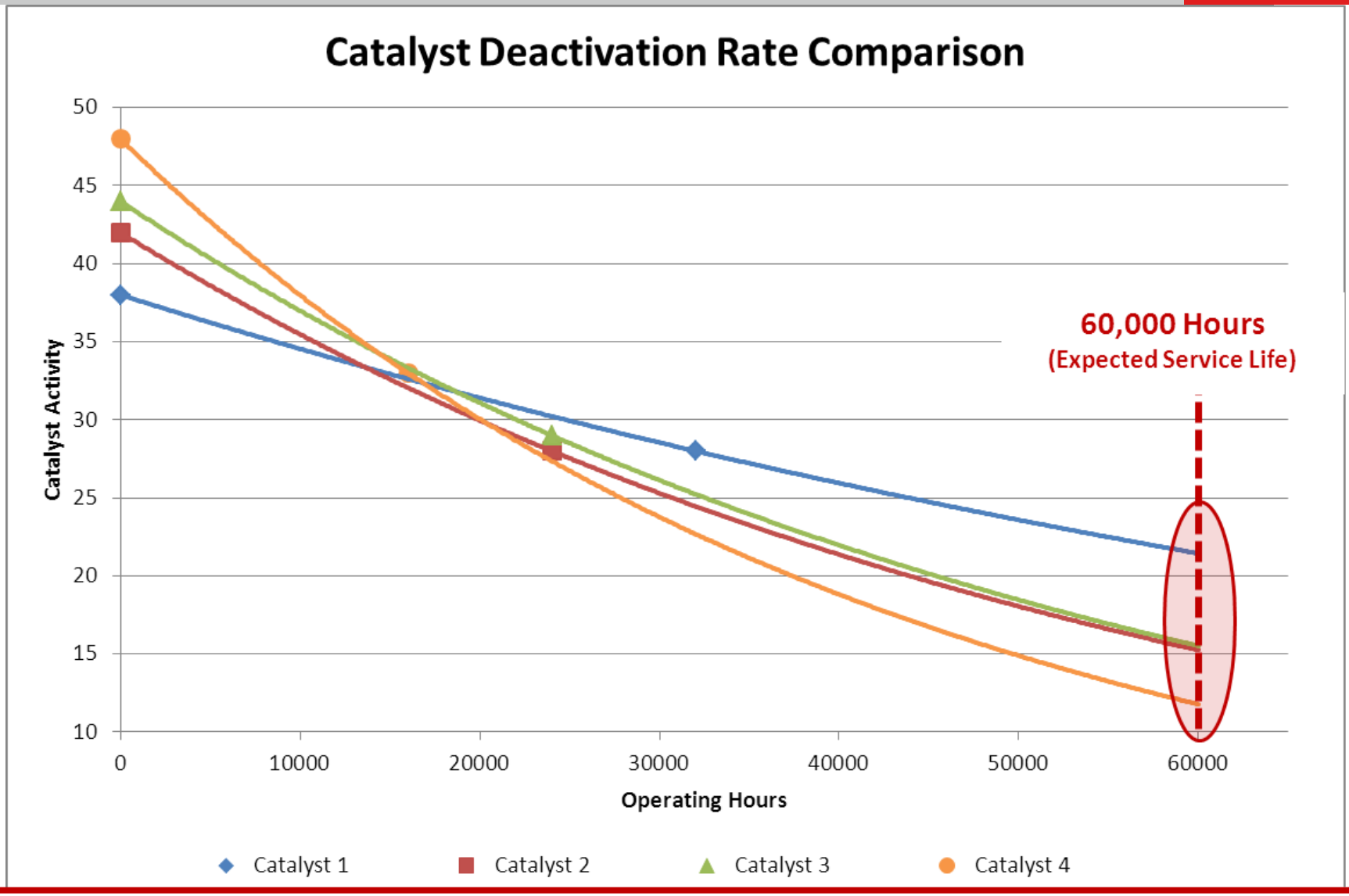
Catalyst thickness and formulations have changed to address these issues and more…

- SO_2 conversion rate went down.
- Catalyst Deactivation was reduced.
- The Co-Benefit of Mercury Oxidation was enhanced

All of these Changes Impact the Management of the NOx Catalyst

Example Situation – Catalyst Deactivation Rates



Different Catalyst Types Deactivate at Different Rates

Since 2009 Additional Performance Benefits have been Guaranteed

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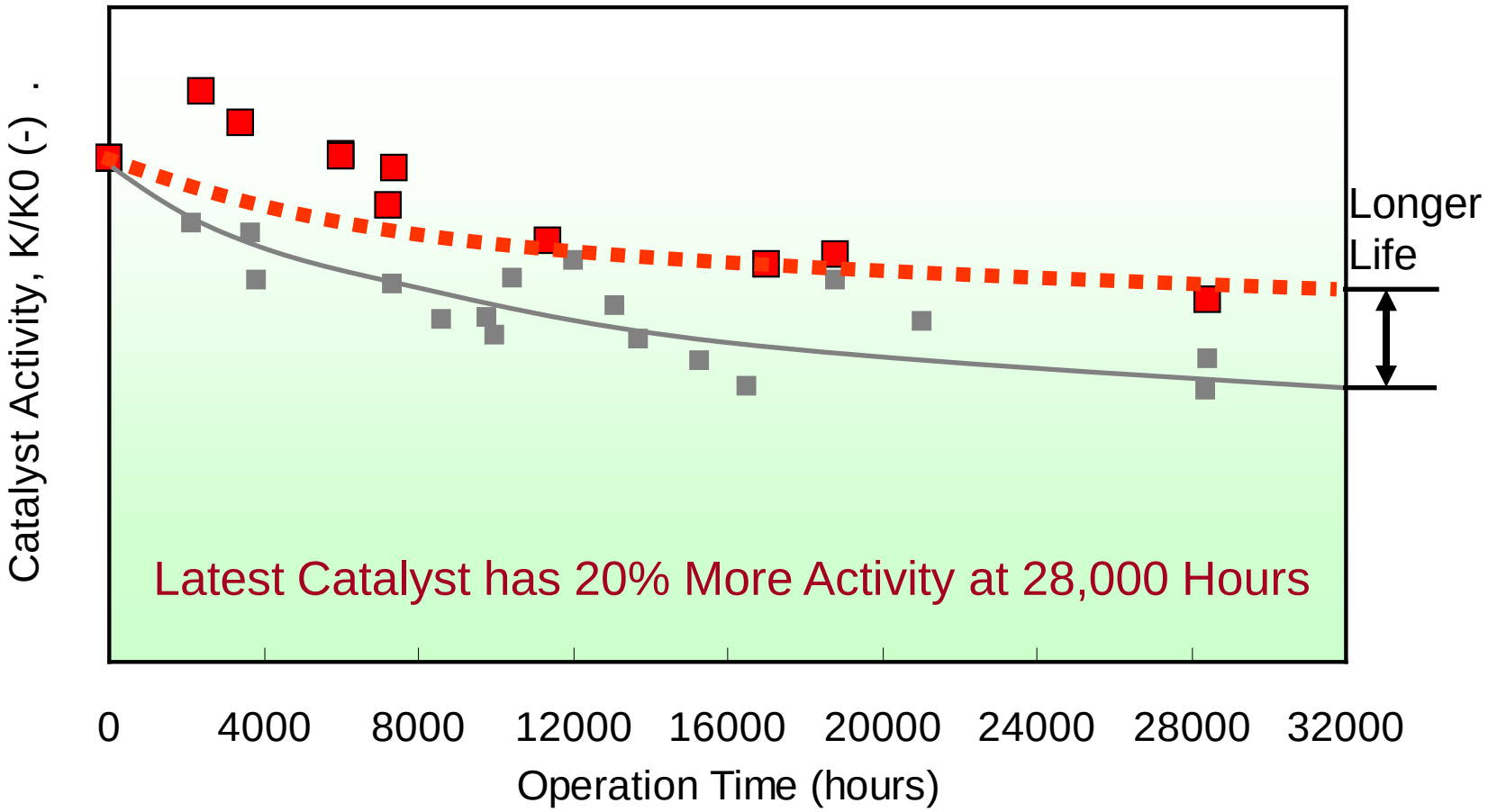
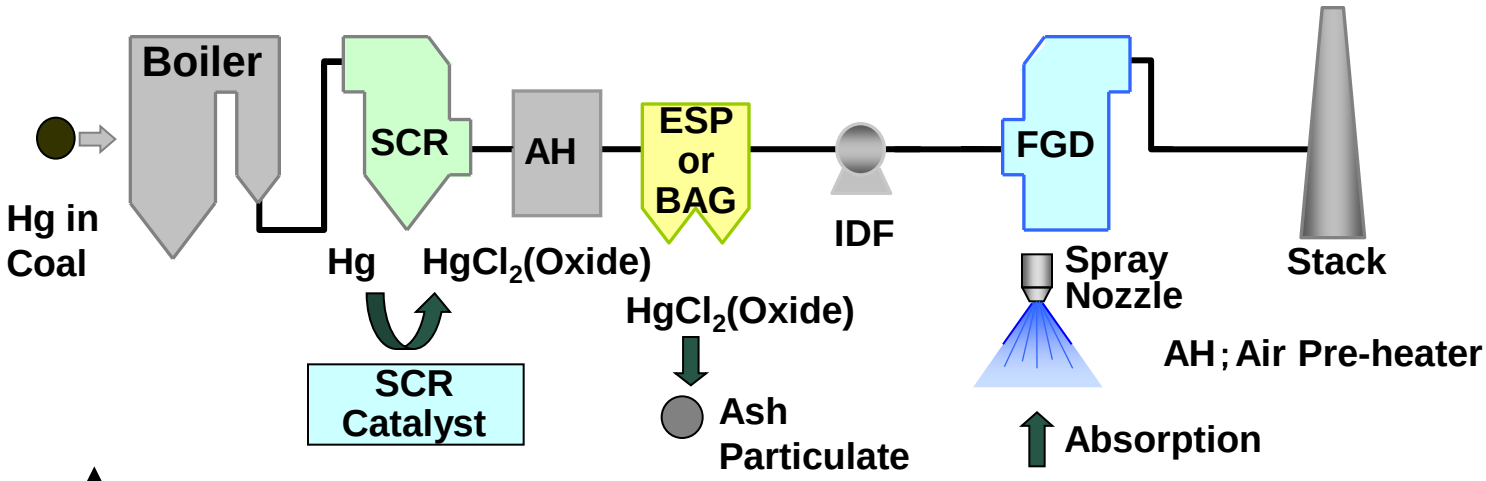
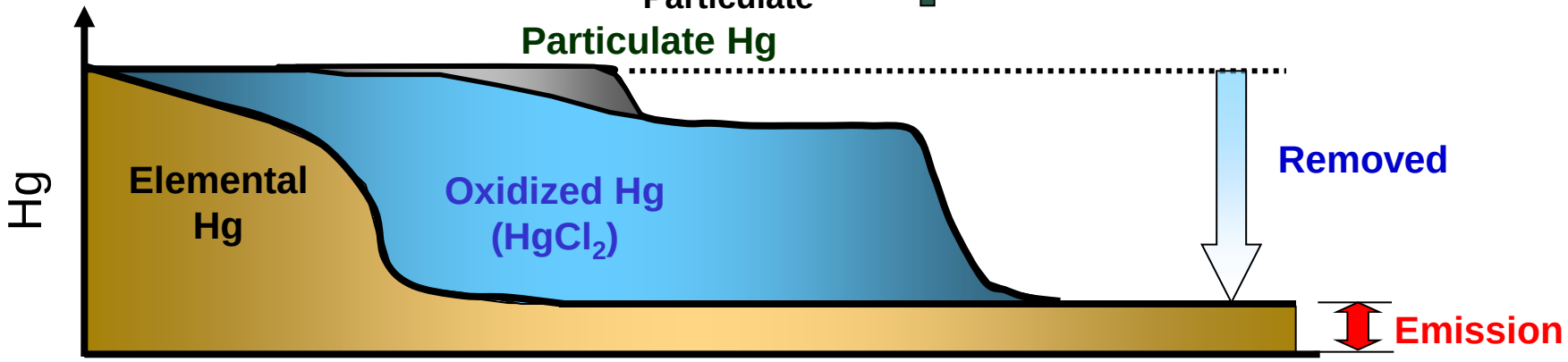


Enhanced Catalyst has Longer Life Compared With Conventional Catalyst.

Resulting in Fewer Replacements.

Process of Hg Removal by SCR + FGD





SCR Catalyst is a key component for mercury oxidation

Mercury Oxidation Catalyst

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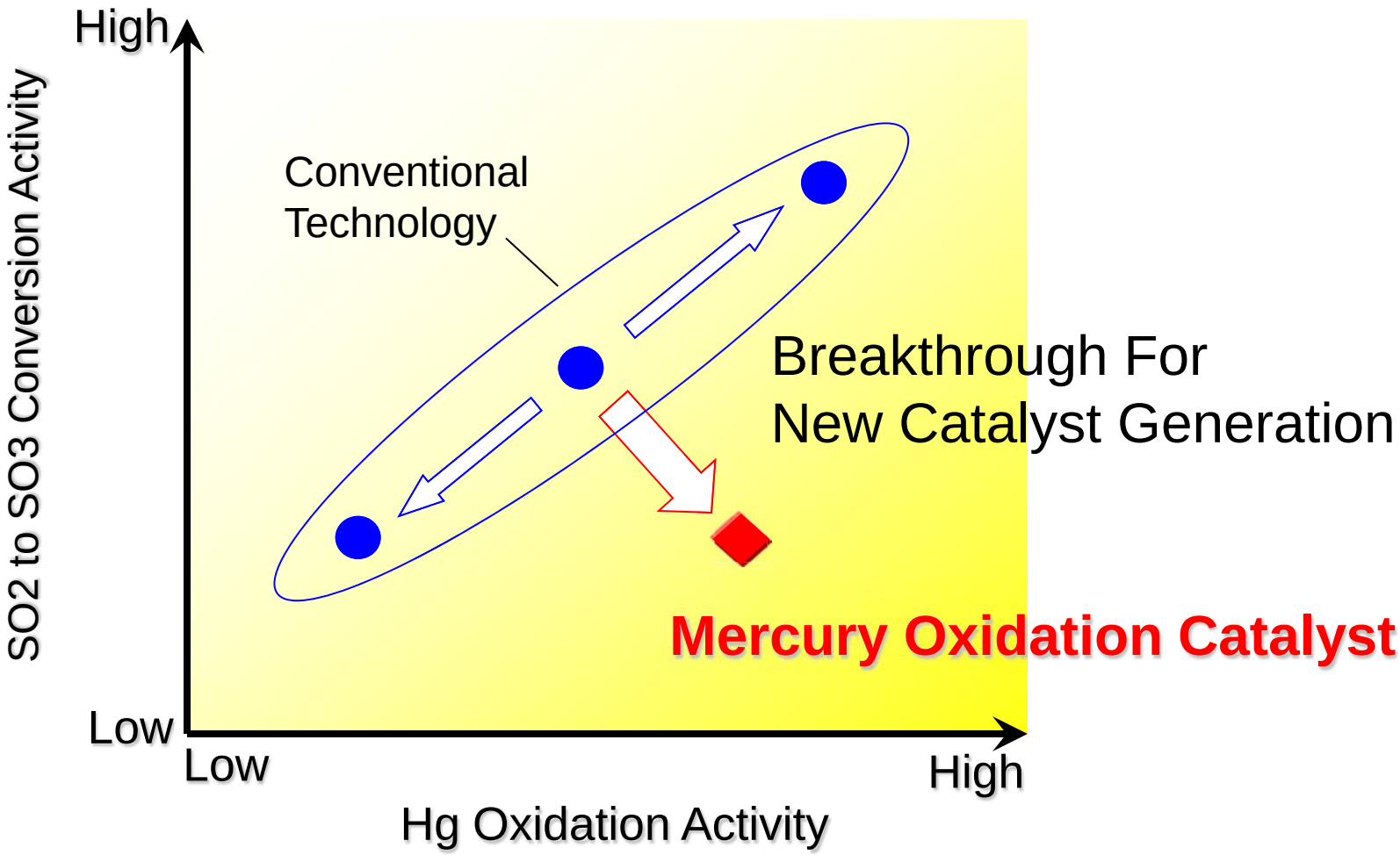
Lower SO_2 conversion is required while keeping higher Hg oxidation.



SCR Catalyst Update Summary

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- SO_2 to SO_3 Conversion Rate is Down to 0.15 - 0.25% per layer.
- Catalyst Deactivation Rate was Reduced by 20%.
- The Co-Benefit of Mercury Oxidation was Enhanced:
  - Bituminous Coals > 95%
  - PRB Coals >85%

Today, Catalyst Suppliers Can Guarantee These Results