

The background is a detailed electrical schematic diagram. It features various components such as circuit breakers, transformers, and busbars, all interconnected by a network of lines representing electrical wiring. The diagram is rendered in a light blue color, providing a technical and professional context for the text overlaid on it.

Power Secure

IDG

INTERACTIVE DISTRIBUTED GENERATION

**Tier IV Generators and
NESHAP retrofits**

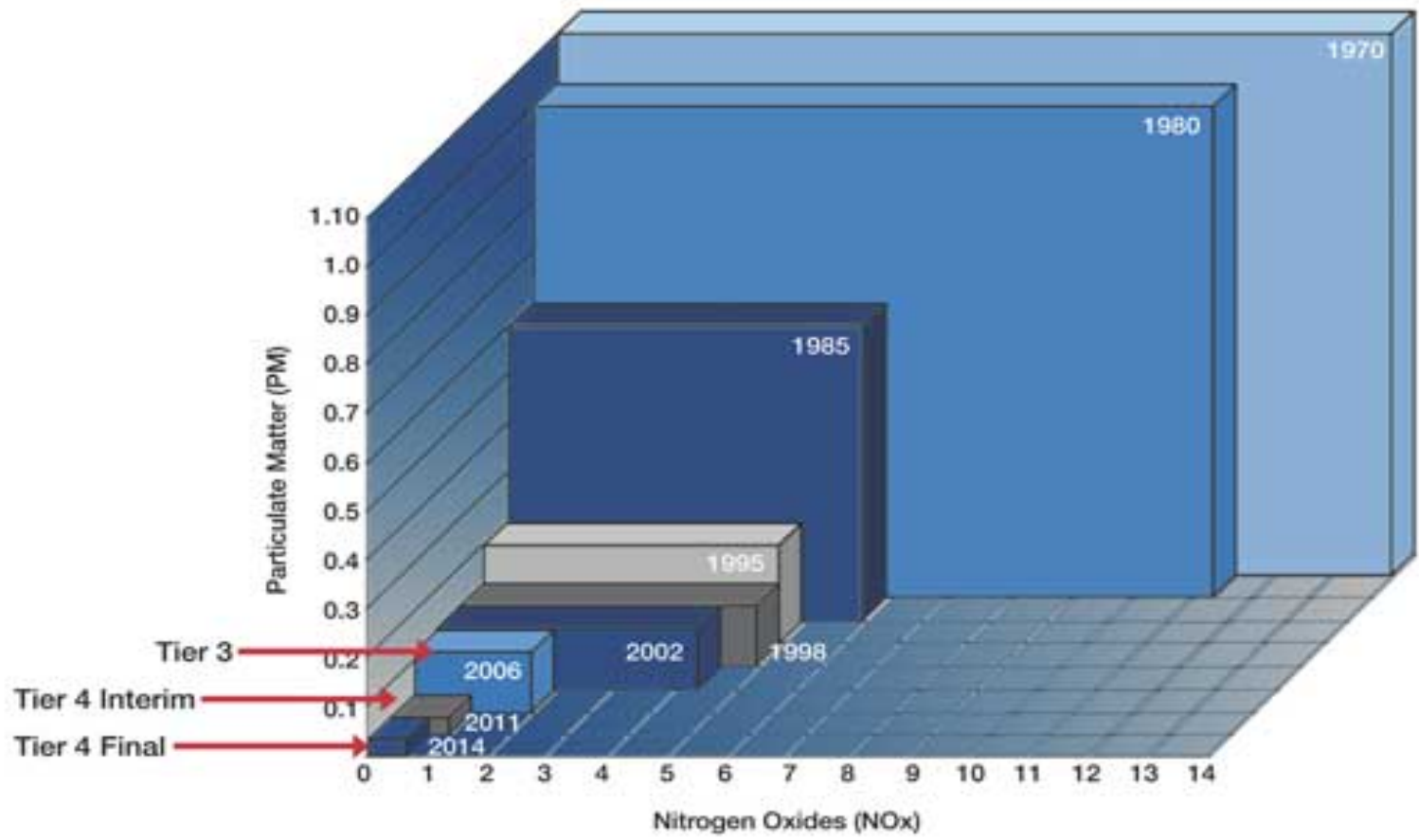
Power Secure

Tier 4 Final and PowerSecure's Solution

As of 2015, all revenue generating DG system installations must meet EPA certified Tier 4 Final requirements. PowerSecure is uniquely qualified to serve this market with our Volvo powered Tier 4 Final certified PowerBlocks.

PowerSecure

Tier IV



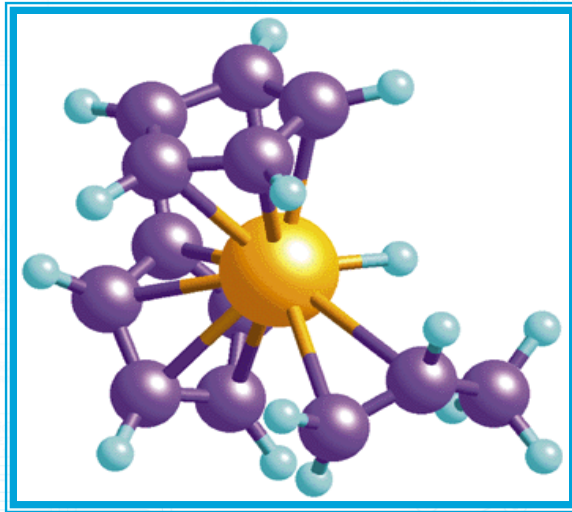
Large Catalytic Silencers



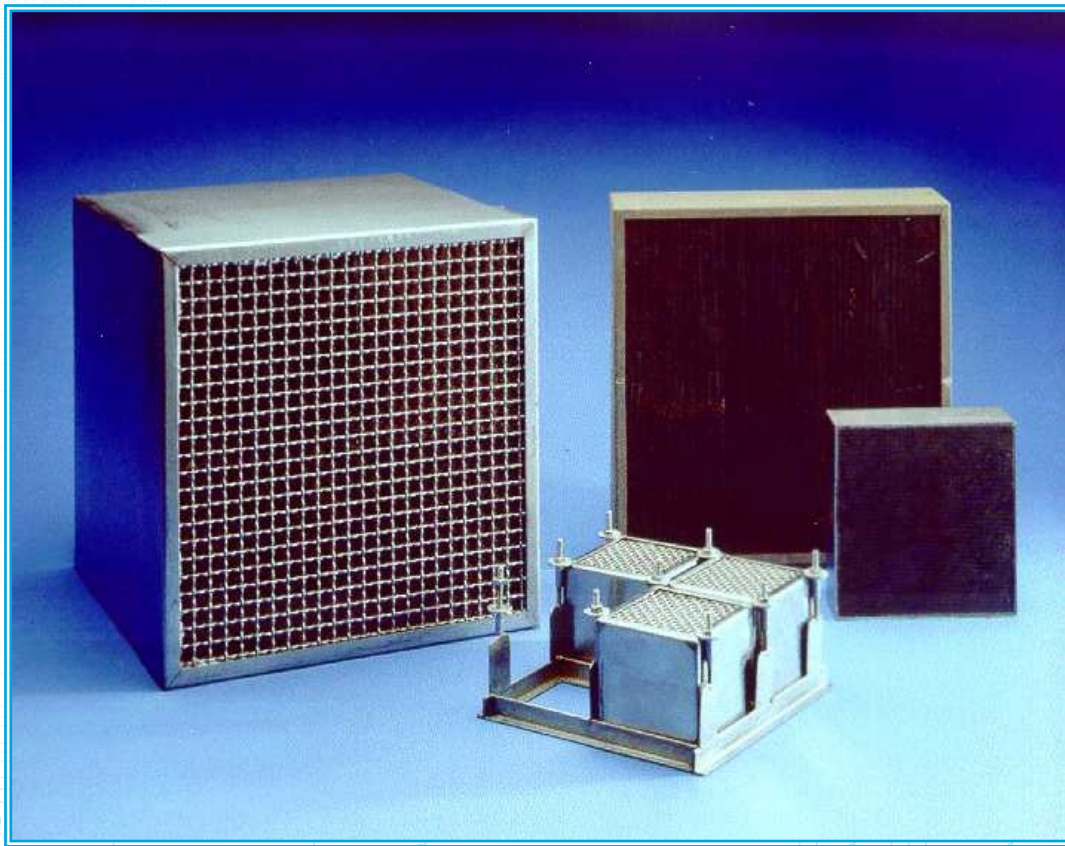
The Catalyst

Definition: A substance that promotes a chemical reaction without being consumed or changed in the process

A catalyst lowers the temperature required for combustion of various chemicals /pollutants



Catalysts - Housed & Framed



Catalyst Design

1. The Substrate
2. The Washcoat
3. The Precious Metal coating

Catalyst Performance is affected by

- ❖ Exhaust Flow (acfm)
- ❖ Exhaust Temperature ($^{\circ}\text{F}$ or $^{\circ}\text{C}$)
- ❖ Catalyst Volume (ft^3)

Catalyst Selection



Fuel Type

Spark Ignition

Rich Burn
($<1\% \text{ O}_2$)

NOx – 3 Way

CO/HAP – 3
Way

NMHC – 3 Way

Lean Burn
($>5\% \text{ O}_2$)

NOx – SCR

CO/HAP – OC

NMHC – OC

Compression Ignition (Diesel)

NOx – SCR

CO/HAP – DOC

NMHC – DOC

PM – cDPF

Reinforcing Enclosures



Oxidation catalyst upfront of SCR



Inside the Engine room



Oxidation catalyst housing



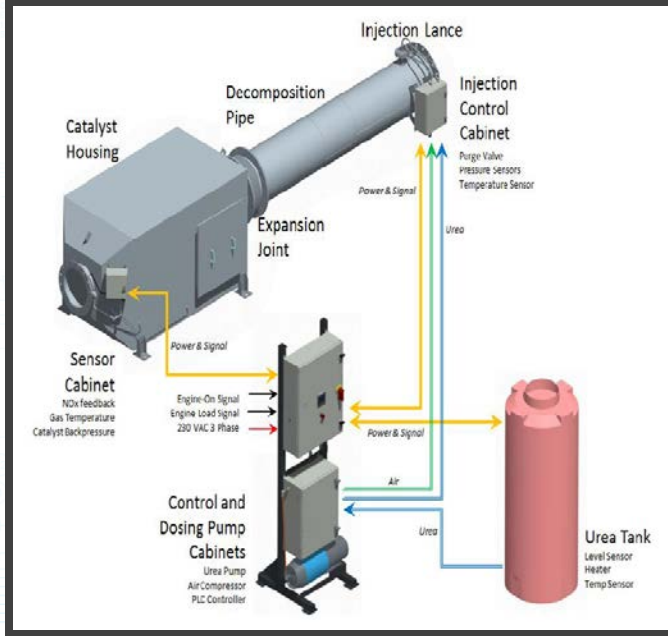
Maintenance: Oxidation Catalysts

- Inspection
- Core samples (larger installations)
- “Coupons” for analysis
- Emissions test
- Wash/rejuvenation

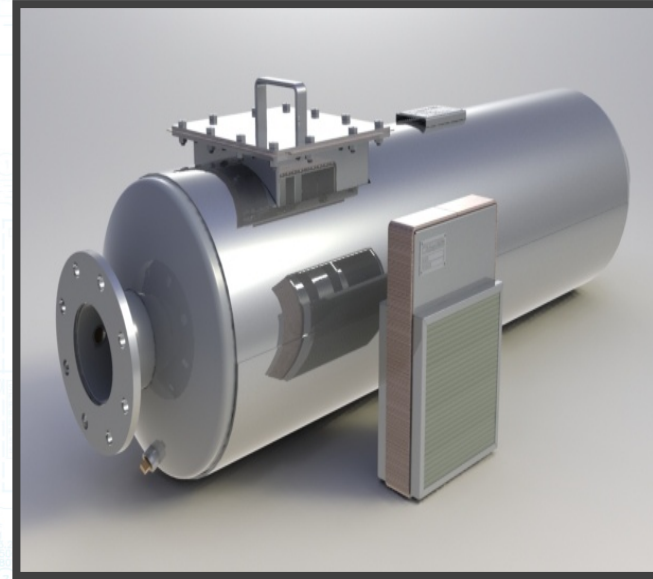


Review: Control Options- State of the Art

NOx - SCR SYSTEM



CO/VOC/NESHAP- OXIDATION CATALYST



A white metal cabinet is suspended in the air by a crane, being lowered next to a brick building. The cabinet has the 'Power Secure' logo on its side. In the foreground, a worker in a high-visibility vest and another worker in an orange jacket are visible near a white structure. The background shows a clear blue sky with some clouds.

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