

# **REINHOLD ENVIRONMENTAL Ltd.**

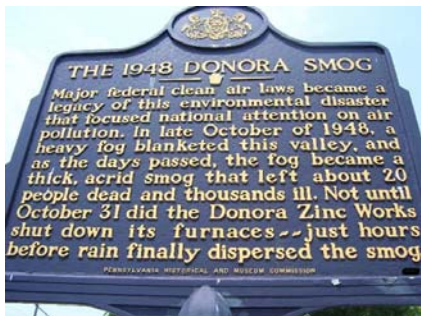


## **2011 APC Round Table & Expo Presentation**

July 11-12, 2011, in Cleveland, OH / Hosted by FirstEnergy

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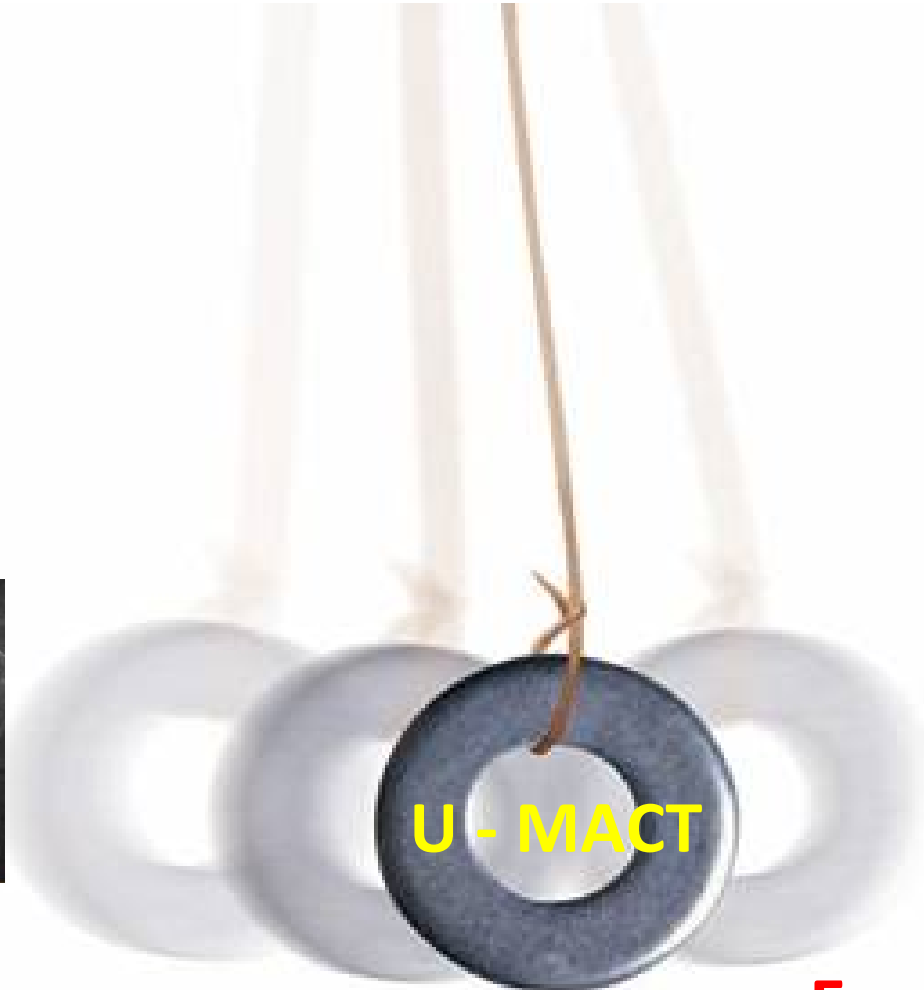
# Where has the Pendulum Swung?



Donora @ High Noon



**No Controls**



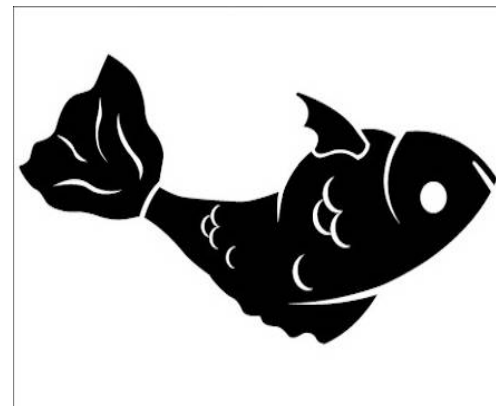
**Excessive Controls**

What will it cost?

\$\$ 10 Billion \$\$

# U - MACT

Hg Limit – 1 lb/TBTU



# Hg Control

Post-Combustion Controls			Mercury Capture Efficiency		
PM	NOx	SO2	Bituminous	Subbituminous	Lignite
ESP	None	Wet FGD	66%	16%	44%
ESP	None	Dry FGD	36%	35%	0%
ESP	SCR	Wet FGD	90%	66%	44%
ESP	SCR	Dry FGD	36%	35%	0%
None	None	Wet FGD	42%	30%	0%
None	None	Dry FGD	40%	15%	0%
None	SCR	Wet FGD	90%	51%	0%
None	SCR	Dry FGD	40%	15%	0%

# Ways to enhance Collection

- ACI
- Alkali
- Halogen Oxidizer
- Proprietary Chemicals
- Co-benefits from Acid Gas Reductions

<b>ACI Collection</b>		
HS Bituminous	CS ESP	73%
LS Bituminous	CS ESP	94%
LS Bituminous	HS ESP	65%
Sub-Bituminous	CS ESP	25%

### **ACI Side Affects**

- Loss of Ash Sales
- Affects on ESP
- SO3 Capture Interference

## **Will ACI or Dry Sorbent Injection trigger NSR?**

- **Was the ESP enhanced to meet 0.03 (PM & Cond.)?**
- **How much of the injected material will be collected?**

## **If the Hg CEMs reading increases?**

- Has the coal changed?**
- Has conditions changed in the SCR?**
- Has the injection media changed?**
- Has the FGD chemistry changed?**