Concrete Thinking for a sustainable world

PCA Portland Cement Association

Portland Cement NESHAP: PCA Perspectives

July 2010

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White House OMB – July 23, 2010

- Summary of PCA NESHAP Concerns
- Pollutant-Specific Considerations
- NESHAP Economic Considerations

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General Concerns

EPA:

- Used pollutant by pollutant approach to create a hypothetical cement plant
- Used a very **limited set of data** to develop the MACT floor standards
- Has not given ample consideration to the **variability** of pollutants in our raw materials and fuels in developing the MACT floor standards
- Does not considered **subcategorization** in developing the MACT floor standards
- Does not understand the capabilities and limitations of various **control technologies** and their ability to allow the cement industry to achieve the proposed standards
- Proposed **HCl** standards even though risk-based studies have shown that no cement plant's emissions cause a risk above a threshold of 1.0
- **ISIS model** has significantly underestimated the economic impact of the proposed rule on the sustainability of the cement industry
- Not properly considered the **negative environmental impact** these rules will create due to increased use of imported cement in the US

Parameter (Units)	EPA Proposal		PCA Recommendations		
	Existing Facilities	New Facilities	Subcategory	Existing Facilities	New Facilities
Mercury (lbs/million tons of feed)	26.2	8.4	Low Limestone	76	30
			High Limestone (>250 ppb)	85% Red.	85% Red.
Total Hydrocarbons (ppmv)	7	6	Major Non-Commingled, Low Limestone	36	12
			Major Non-Commingled, High Limestone	204	68
			Major Commingled	80	20
			Area	Work Practice	Work Practice
Hydrochloric Acid (ppmv)	2.0	0.1	Site Specific Risk-based Approach		
Particulate Matter (lbs/ton of feed)	0.048	0.048	NA	0.092	0.062

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HCl

PCA Concern

- HCl is a threshold pollutant. Risk-based analyses have shown that it does not pose a significant risk at the levels emitted by cement plants
- The only benefit attributed to an HCl standard is coincident SO2 reductions. The agency has several mechanisms to regulate SO2 and this is not one of them.
- The proposed emission standards are based on stack test data, yet CEMs are proposed for compliance
- The primary HCl control technology – wet scrubbers – are very costly (>$20MM/ea) yet no significant environmental benefits are gained by their installation.
- Limited availability of water in many parts of the U.S. raise doubts about the ability to use wet scrubbers that require over 20 million gallons for HCl control on some kilns
- PCA has not had the opportunity to review data collected through the latest Section 114 data request. It will be extremely important to capture emissions variability when determining an emissions floor for HCl.

Recommendations

- Reaffirm the risk-based exemption, previously adopted by EPA in 2006
- Alternative I: EPA should propose a site specific risk based approach whereby each plant would limit HCl emissions to a level that demonstrates that the reference dose remains below 1.0
- Alternative II: Set an HCl limit at 23 ppm based on the highest impact cement plant
- Alternative III: EPA should propose and not finalize an HCl standard and provide PCA an opportunity to comment on the HCl standard setting process and specifically how EPA accounted for emission variability in the standard setting process
- Allow stack testing for compliance demonstration. HCl CEMS have not been demonstrated to work on cement kilns.

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Mercury

PCA Concern

- Mercury comes primarily from plant-specific limestone and fuel
- Some plants will not be able to achieve the standard even when equipped with technology. Therefore, subcategorization is needed.
- Emission Standards were based on mass balance not CEMS
- Hg MACT floors are based on 30 days of limestone data. Cement plant quarries have 50-100 yrs of reserves. 30 days of data cannot represent the normal variability for a cement plant quarry.

Recommendations

- Utilize statistical approaches which allow for more expansive consideration of variability when determining a specific emission limit
- Mass balance should be a compliance option
- Subcategorize facilities based on high concentration vs low concentration mercury in limestone
- Establish a percent removal standard as a beyond the floor requirement for kilns with high concentration mercury limestone

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THC

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- THC emissions are influenced both by the plant configurations and the content of organic materials in the limestone
- EPA used a very limited set of data to develop the proposed MACT floor standards. Even with supplemental data from additional THC monitoring during the first half of 2010, the data set is still very limited
- RTOs have a 10+ ppm performance limit, In addition, RTOs generate GHGs and many plants have limited or no access to natural gas
- Activated Carbon Injection (ACI) has limitations, especially that it is not effective on light hydrocarbons

Recommendations

- Establish subcategories for those facilities that:
  - commingle emissions from other sources (mills & dryers) with kiln gases vs those that do not commingle gases
  - use high vs low organic content limestone
  - area sources vs major sources
- Utilize statistical approaches which captures all aspects of variability
- Employ work practice standards for those plants that are area sources
- Retain the alternative organic Hazardous Air Pollutant compliance approach proposed by EPA

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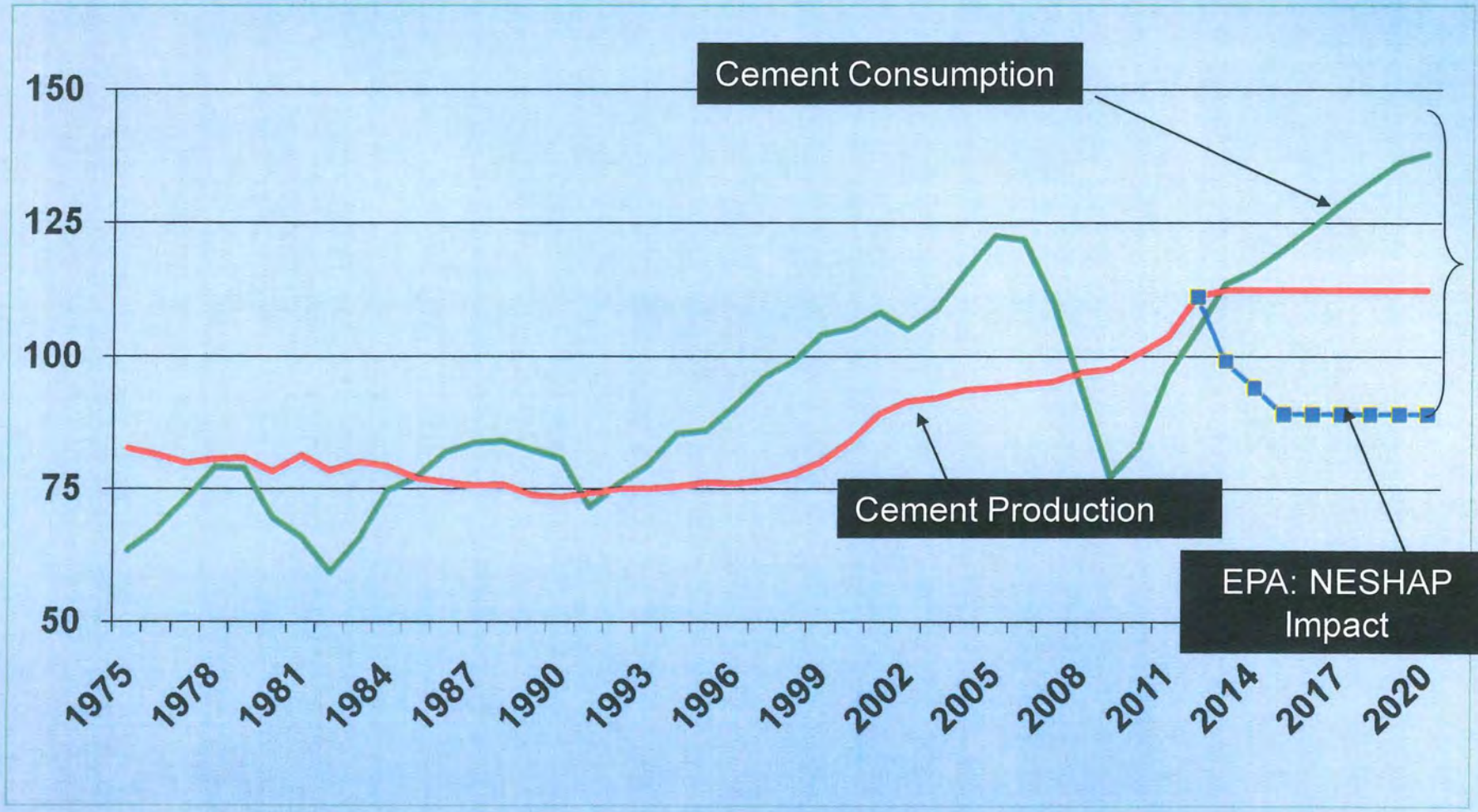
U.S. Supply Balance: EPA Proposed NESHAP Impacts

Million Metric Tons



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Economic & Trade Impacts

- 48 million tons cement capacity reduction will be replaced by imports which will add an additional 12 million tons of GHG resulting from transportation of cement from China, Thailand etc. (Transportation CO2 from far east is 25% of total CO2 generated per ton of cement manufactured)
- Hg emissions will continue to be emitted from the import nations into the atmosphere
- As noted here, the NESHAP impact will further erode the environment globally while costing US many high paying jobs.

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U.S. Cement Manufacturers – Economic Impacts

- **Cement industry overview:**
- The industry operates 100 clinker producing plants in 36 U.S. states;
- Annual U.S. clinker capacity is 102 million metric tons, placing the U.S. behind only China (1,640 MMT) and India (200 MMT), which together account for more than two thirds of global cement production.
- The industry directly employs more than 15,000 persons in highly paid, sought after jobs.
- **Industry contributes significantly to U.S. federal, state and local economies.**
- Cement is the key ingredient in concrete.
- Concrete is the foundation of our nation's infrastructure, found in roads, homes, bridges, buildings, dams, levees and in newer applications, such as platforms for wind energy facilities.
- In 2008, nearly $27.5 billion of America's economic activity, or gross output, occurred in the cement and allied industries.
- In addition to federal tax payments, almost $1 billion in indirect tax revenue was generated by the cement industry for state and local governments in 2008.
- Construction spending accounts for nearly $1 trillion of annual domestic spending and employs nearly 6 million people.
- **NESHAP compliance costs are projected to be high.**
- Compliance with the rule, as proposed, will cost the industry more than $4.7 billion dollars, ultimately resulting in as much as a $21 increase in the per ton cost of cement in 2020.
- Making these types of investments under a short period (2010-2013) will be very difficult considering the current economic situation.

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Thank You!

Building Better Outcomes with Concrete