



**Department of the Environment**

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# MDE SO<sub>2</sub> Regulations

## *A Status Report*



**2014 Power Plant Regulations  
Stakeholder Meeting – June 23, 2014**



# Topics Covered

- Background
- Current MDE Thinking on the SO<sub>2</sub> Regulation
- Discussion
- Next Steps and Schedule



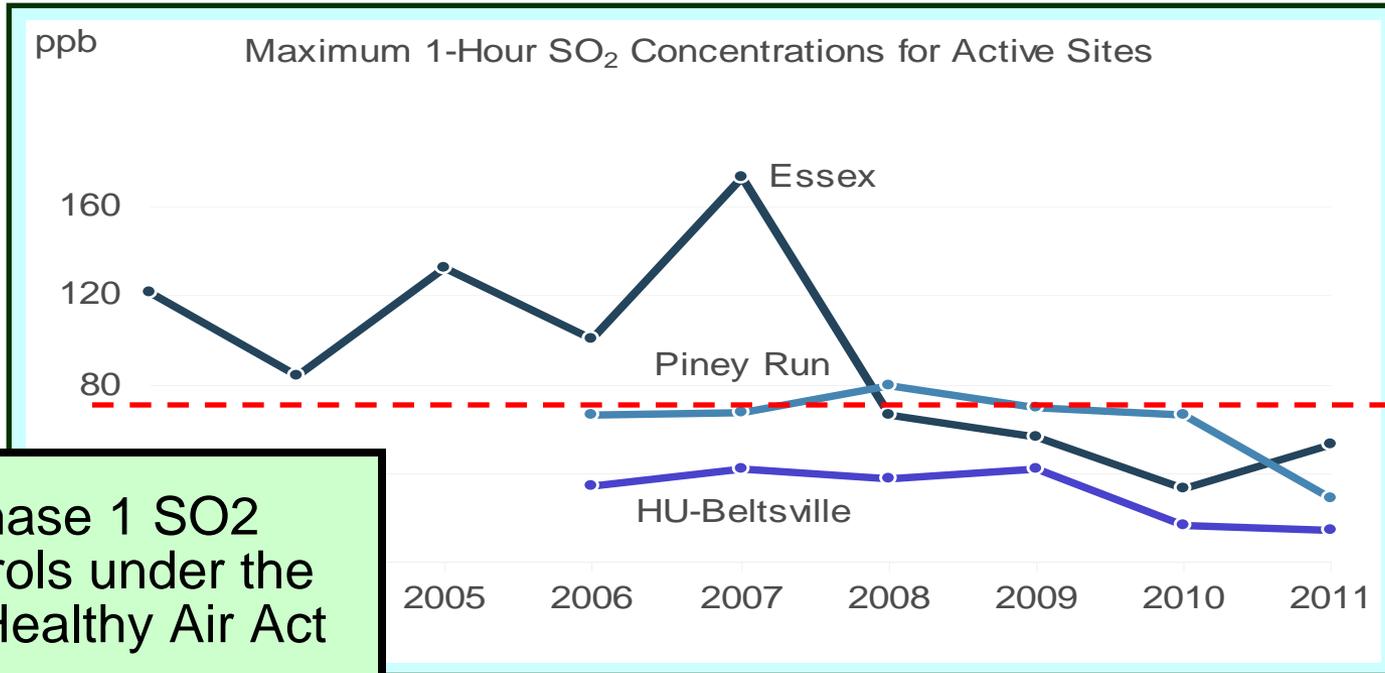
# The New SO<sub>2</sub> Standard - Background

- Finalized by EPA in 2010
  - 75 ppb as a 1-hour standard
  - More on public health drivers of the new standard later
- August 2013
  - EPA only designated areas of the country that were monitoring nonattainment
- Rest of country, including all of Maryland, has not been designated:
  - Neither “unclassified/attainment” nor “nonattainment” designation
  - Undesignated areas will be designated in 2017-2020, based on monitoring or modeling data yet to be collected
  - Early attainment option also included in EPA guidance





# One-Hour SO<sub>2</sub> Trends

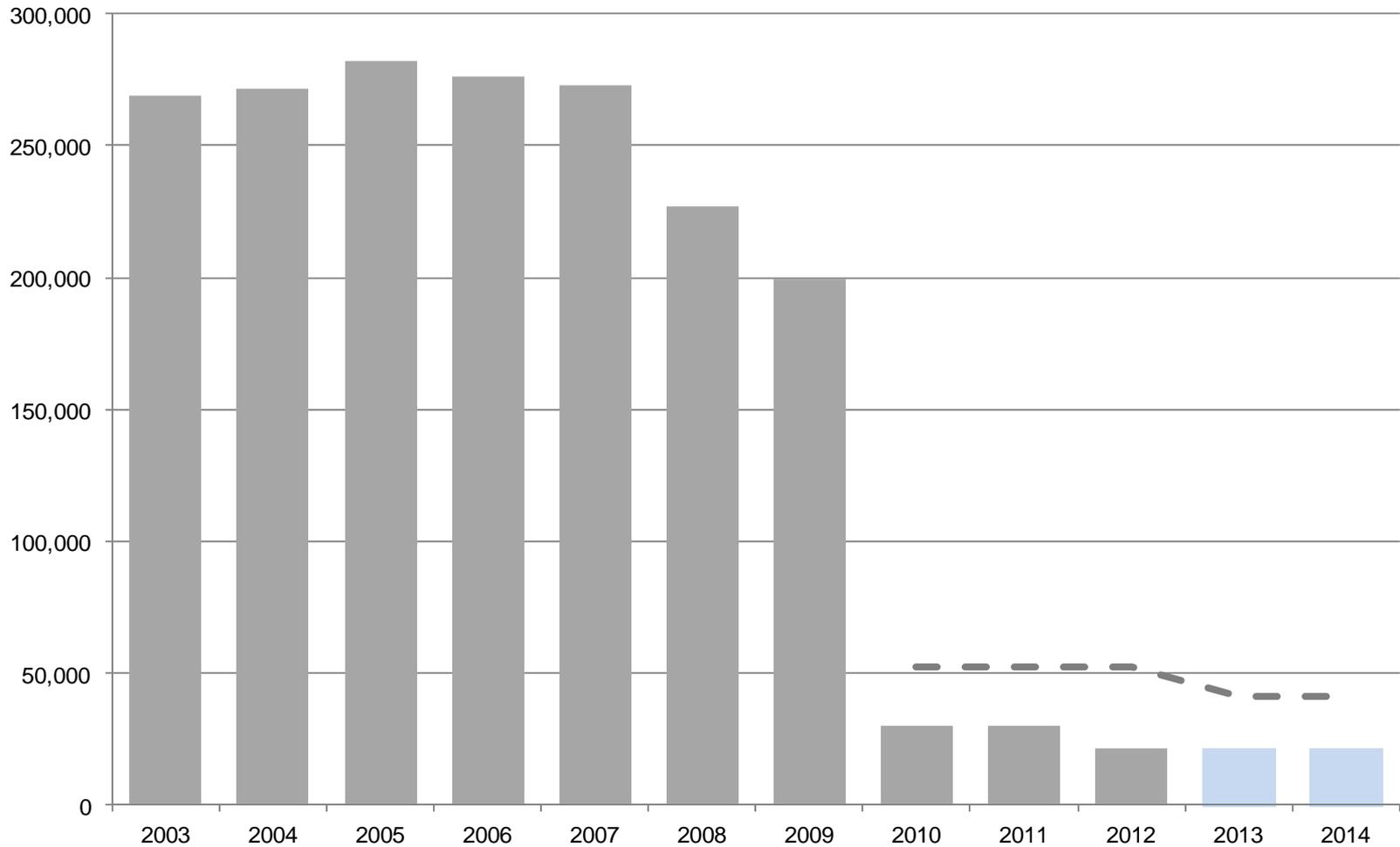


Phase 1 SO<sub>2</sub> controls under the MD Healthy Air Act

Year	SO <sub>2</sub> Emissions (Tons/Year)				SO <sub>2</sub> Concentrations at Essex (ug/m <sup>3</sup> )	
	Total	Brandon Shores	Wagner	Crane	Average	Max 1-hour
2007	92,931	42,041	20,259	30,631	12.45	452.7
2008	79,282	39,924	15,006	24,352	11.08	172.7
2009	60,390	32,821	15,093	12,477	8.55	146.6
2010	15,877	1,260	9,028	5,589	6.77	86.4
2011	17,518	2,829	9,007	5,682	5.30	139.2
2012	12,494	2,848	7,473	2,173	4.55	67.8

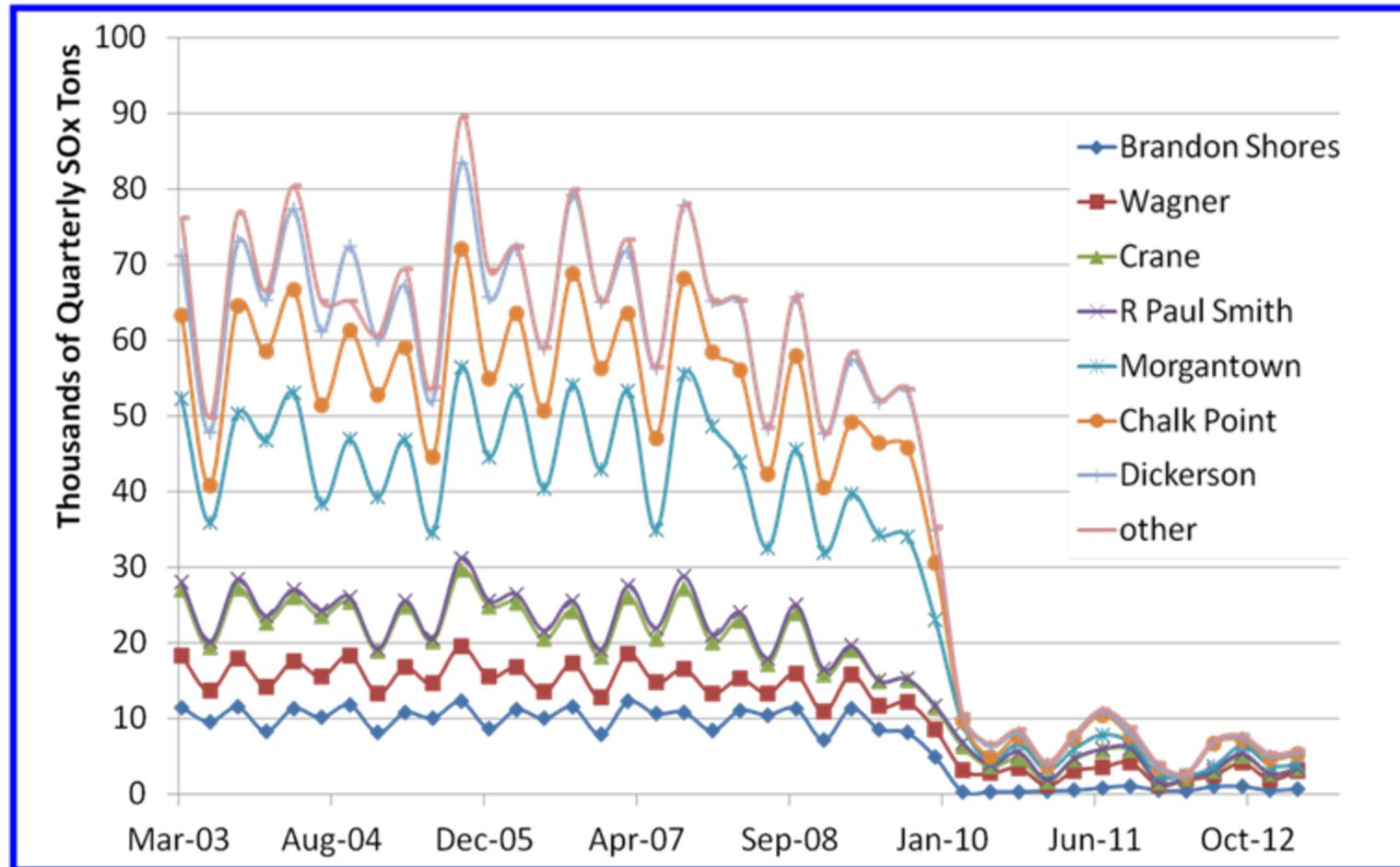


# Again ... HAA Results for SO<sub>2</sub>



# Healthy Air Act SO<sub>2</sub> Caps

Healthy Air Act caps reduced annual SO<sub>2</sub> emissions



# Issues With SO<sub>2</sub> Emissions

- The Healthy Air Act's annual caps – and company-wide averaging concepts - worked extremely well to cost-effectively reduce annual SO<sub>2</sub> emissions
  - These reductions have helped Maryland come into attainment for the fine particulate standard and meet the Regional Haze requirements of the Clean Air Act
- The new 1-hour SO<sub>2</sub> standard demands an entirely different regulatory scheme
  - 1-hour emission limits instead of an annual cap
  - Unit-by-unit controls instead of company-wide averaging
- Units that under-controlled as part of a company-wide averaging plan are struggling to meet the limits needed because of the new standard





# Status of the MDE SO<sub>2</sub> Regulations

- Again, we have been working on these regulations for over 2 years
- We have completed modeling to help define the regulatory limits
  - Anxious to see any new modeling that others have started
- Have continued to work with EPA
  - EPA guidance issued in early 2014
- Regulatory concepts described in earlier draft regulation have not changed much at all
  - We have identified several key issues that we are still waiting for input on
  - We have also begun to include several new issues from the EPA guidance



# Modeling for the SO<sub>2</sub> Limits

- Maryland has performed modeling for all of the Raven and NRG plants
  - The Maryland modeling was completed by MDE and the Department of Natural Resources (DNR) Power Plant Research Program (PPRP)
- Sierra Club has performed modeling for the Raven and NRG plants
- Raven and NRG may also be performing modeling to look at this issue





# MDE Current Thinking on Limits

Affected Electricity Generating Unit	1-Hour Limits from MDE 1/16/14 Draft	30-Day Rolling Average (EPA Guidance)
Brandon Shores Unit 1	1000	430
Brandon Shores Unit 2	1000	520
C.P. Crane Unit 1	1400	854
C.P. Crane Unit 2	1400	980
Chalk Point Units 1 and 2	2400	1320
Dickerson Units 1, 2 and 3	1000	400
H.A. Wagner Unit 2	500	440
H.A. Wagner Unit 3	1000	850
Morgantown Unit 1	1500	720
Morgantown Unit 2	1500	750
Warrior Run	Under development	

- 1-hour limits from 1-16-14 draft MDE regulation
- 30-day limits based upon 1-hour limits converted to 30-day averages using EPAs April 2014 SO<sub>2</sub> guidance



# Two Issues – Issue # 1

- In the draft 1/16/14 SO<sub>2</sub> proposal MDE asked for comment on two significant issues
  - Issue # 1 ... A three plant “bubble” for Crane, Wagner and Brandon Shores

*(5) Alternative Emission Limits. MDE is considering a provision in the regulation that would establish limits in situations where there are multiple units on the same piece of property. Because of issues like different stack heights and exit velocities at different units, the alternative limits would have to be proposed by the facility and approved by MDE and included as a revision to the SIP. The alternative limits would need to be based on modeling that shows that they will comply with the 1-hour SO<sub>2</sub> NAAQS. Comments on this issue are encouraged.*



# Issue # 2

- In the draft 1/16/14 SO<sub>2</sub> proposal MDE asked for comment on two significant issues
  - Issue # 2 ... Using an averaging period of more than 1-hour based upon EPA guidance

*(3)30-Day Averaging. MDE is considering provisions that would establish 30-day averaging that will still guarantee attainment with the 1-hour SO<sub>2</sub> NAAQS. MDE understands there is research going on in this area. Comments on this issue are encouraged.*

- MDE has received some comment on these issues , but thoughts from other stakeholders would be welcome



# Proposed Regulatory Schedule

- 2012 to 2014
  - Many meetings, calls and other discussions with interested stakeholders
- Fall/Winter 2014
  - Additional stakeholder meeting to finalize draft regulation
- Late 2014/2015
  - Maryland Air Quality Control Advisory Council (AQCAC)
- Early 2015
  - Regulations become effective

