

## AGENDA ITEM 6

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### North Carolina Division of Air Quality (DAQ) Update Report on the EPA Electrical Generating Units Mercury and Air Toxics Rule Prepared for May 9, 2012 NC Air Quality Committee Meeting

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The final EPA Mercury and Air Toxics (MATS) rule for Electrical Generating Units is largely unchanged from proposal. Changes were made to increase flexibility and provide opportunities to reduce cost while maintaining significant emission reductions. The effective date of the rule is April 16, 2012, and the compliance date is April 16, 2015. State permitting authorities can also grant an additional year as needed. EPA expects this option to be broadly available.

- Sub-categories and Emission Limits. EPA set up 4 sub-categories for coal-fired and other solid and liquid fuel categories. EPA set numerical hazardous air pollutant (HAP) standards for particulate matter (PM), hydrogen chloride (HCl), and mercury for solid fuel units (see Table 1 below). All other standards are work practices. EPA set work practices because most data for organic HAP emissions were below detection and impractical to measure.
- Final emission limit for Filterable PM – instead of Total PM-- as a surrogate for non-mercury metal HAP. The agency finalized a filterable PM limit, consistent with all other toxics rules. This seems appropriate because most metallic air toxics consist of filterable PM and the one that is not – selenium -- is well controlled by the acid gases limit. The pollutant form changed from Total to Filterable PM, but EPA retained the same numerical emission limit (0.03 pounds per million British thermal units fuel input, lb/MMBtu).
- Final mercury emission limit and more flexible emission averaging: EPA kept the same mercury emission limit from the proposed level of 1.2 lb/TBtu with the same 30-day averaging, and kept the requirement for using mercury continuous emission monitoring system (CEMS) or sorbent trap monitoring. Facilities can use the option of facility-wide averaging to meet the limits for mercury. Facilities may use a longer averaging time for mercury – 90 days instead of 30 days – but they must meet the tighter limit of 1.0 lb/TBtu limit.
- Compliance Demonstrations and more flexible monitoring. For units with certified CEMS to measure the pollutants (*i.e.*, SO<sub>2</sub> for HCL and mercury), the initial performance test consists of valid CEMS data recorded prior to the initial compliance date. Facilities must show continuing compliance with the SO<sub>2</sub> (instead of HCl) emission limit of 0.2 lb/MMBtu and mercury emission limits by using all valid hourly data collected during each successive 30-boiler operating day period rolled daily. One modification was making PM CEMS optional, and allowing the use of PM continuous parametric monitoring to serve as an operating limit.
- NC Coal-Fired Utility Boilers EGU MATS 2010 Emission Performance. Most of the largest NC EGUs equipped with suitable NO<sub>x</sub> and acid gas controls currently meet the EGU emission limits on a non-continuous basis. Evaluations of relatively minor performance improvements are underway at the largest EGUs to assure continuous compliance with the EPA mercury emission limits. Those smaller EGUs without suitable controls and emission performance have been retired or will be retired by the 2015 MATS compliance date.

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**Table 1. NC Coal-Fired Utility Boilers EGU MATS 2010 Emission Performance**

Facility	Units	Rating	Emission Controls			2010 Annual Emission Average			
		MW approx	NOx	PM / Metals	SO <sub>2</sub> /HCl/Hg	PM	Acid gases		Hg
							HCl	or SO <sub>2</sub>	
						lb/MMBtu		lb/TBtu	
<b>EGU MATS Emission Limits</b>						<b>0.03</b>	<b>0.002</b>	<b>0.2</b>	<b>1.2</b>
<b>Duke Energy</b>									
Allen	5	1,150	SNCR	ESP-CS	FGD	0.026	0.003	0.08	0.3
Belews Creek	2	2,500	SCR	ESP-CS	FGD	0.027	0.003	0.05	0.2
Cliffside	1	570	SCR	ESP-CS	FGD				
Marshall	4	2,000	SCR/SNCR	ESP-CS	FGD	0.022	0.003	0.07	0.4
Retire 16 other small boilers with 2,000 MW, but keep the above 12 large boilers with 7,200 MW									
<b>Progress Energy</b>									
Asheville	2	380	SCR	ESP-CS	FGD				
Mayo	1	730	SCR	ESP-HS	FGD	0.034	0.0001	0.2	1.4
Roxboro	4	2,400	SCR	ESP-CS/HS	FGD	0.010	0.0001	0.2	0.9
Retire 11 other small boilers with 1,500 MW, but keep the above 7 large boilers with 3,500 MW									

Benefits of MATS. According to EPA, the final rule will:

- Prevent 90% of mercury emissions and reduce 88% of acid gas emissions from power plants.
- Reduce mercury exposure.
- Protect Americans from cancer and other health risks from exposure to metals (like arsenic).
- Prevent thousands of premature deaths each year by reducing the amount of fine particles.

EPA claims the value for national health improvements total \$37 billion to \$90 billion a year, and the NC health benefits are \$1.6 billion to \$3.9 billion. The estimated annual costs of the rule are \$9.6 billion. Table 1 presents the US EPA estimated benefits of the MATS rule.

**Table 1. Adverse Health Condition Effects Avoided by the MATS Rule**

Adverse health condition cases	Effect avoided Nationally	Effect avoided in NC
Premature deaths	4,200 to 11,000	190 to 480
Chronic bronchitis	2,800	112
Heart attacks	4,700	188
Aggravated asthma	130,000	5,200
Acute bronchitis	6,300	252
Respiratory symptoms	140,000	5,600
Hospital and emergency room visits	5,700	288
Miss work person-days	540,000	21,600
Restricted activities person-days	3,200,000	128,000

Source: US EPA