Department of Environmental Protection
Division of Air Resource Management
Clean Air Mercury Rule (CAMR) Preliminary Proposal
March 2, 2006

Today's proposal, like our November 29, 2005, preliminary proposal, is one concept offered by the Division of Air Resource Management for the purpose of generating comment on options for implementing CAMR in Florida. Following today's workshop, the department will begin the formal rulemaking process. After considering comments received from this workshop, we will develop draft proposed rule language for a rulemaking workshop on April 13, 2006, in Tallahassee. We expect to have that language available for review by April 6, 2006.

Details of Today's Preliminary Proposal

1. Require all but the very smallest (≤175 MW) coal-fired electric steam generating units to comply with NSPS-equivalent mercury (Hg) emission limiting standards beginning January 1, 2010, except as otherwise provided for certain multi-unit facilities during a three-year phase-in period. Require all coal-fired units to comply with NSPS-equivalent monitoring, reporting and recordkeeping requirements beginning January 1, 2009.

   - Units less than or equal to 175 MW nameplate capacity would be exempt from having to meet any Hg emission limitation, but would still be required to monitor emissions, report data to DEP, and keep records in accordance with NSPS-equivalent methods and procedures. These units account for 609 MW, or about 5%, of the state's current coal-fired capacity. They are Crist Units 4 & 5 (93 MW each), Scholz Units 1 & 2 (49 MW each), Lansing Smith Unit 1 (175 MW)—all operated by Gulf Power Company—and Central Power & Lime, a co-generator at Florida Crushed Stone (150 MW, but already equipped with lime injection and baghouse to reduce Hg emissions).

   - All units greater than 175 MW nameplate capacity would be required to meet NSPS-equivalent Hg limit of 21×10^{-6} lb/MWh by 2013. These units account for 11,258 MW, or about 95%, of the state's current coal-fired capacity.

   - Phase-in period (2010-2012) for multi-unit facilities required to install control equipment: Units comprising at least 50% of a facility's total coal-fired capacity would be required to meet the NSPS-equivalent Hg limit by January 1, 2010, where total coal-fired capacity is based only on units greater than 175 MW capacity. This phase-in period provides additional time for installation of planned CAIR control equipment at TECO Big Bend Unit 1 (SCR in 2010), Progress Energy Crystal River Units 1 & 2 (FGD/SCR in 2011-2012), and Gulf Power Lansing Smith Unit 2 (activated carbon injection and baghouse by 2010).

   - When fully phased in, this proposal would limit annual Hg emissions from existing coal-fired steam generating units to an estimated 1,761 pounds per year (assuming an 80% capacity factor for all units), compared to Florida's annual Hg budget for 2010-2017 of 2,466 pounds per year. The difference, 705 lb/yr, would be available for new coal-fired units expected to come on line during the 2010-2017 control period and any utilization of existing units above 80% capacity.

2. Opt in to EPA-administered mercury cap & trade program beginning with control year 2018.

   - Allocate Hg allowances in 2015 and annually thereafter for a one-year control period three years out. Florida's annual mercury budget for 2018-on is 975 pounds per year.

❖ Establish new unit set-aside:

- For all control years 2018-on: Reserve 3% of Hg budget each year (29 pounds per year) for allocation to units that commenced commercial operation five years prior to the control year or later; e.g., for control year 2018 -- units that commenced commercial operation within the five-year period 2013-2017 and, therefore, do not have one full year of operation in time for the regular allocation in 2015. Place remaining 97% of budget in existing-unit pool.

- Allocation requests: CAMR designated representatives request use of new unit set-aside allowances by July 1 of the control year, not to exceed actual Hg emissions of the year prior.

- Allocation process: DEP allocates new unit set-aside allowances, by administrative order, to all eligible units for each control year as soon as possible after July 1 of the control year, and submits resultant allowances to EPA by October 31 of same year.

❖ Allocate 2018-on allowances in each year 2015-on, respectively:

- Allocation factor for existing (pre-2009) units: average of three highest years of heat input for the five-year baseline period beginning six years prior to the allocation year (2009-2013 for allocation year 2015; 2010-2014 for allocation year 2016; etc.), using coal-type adjustment factors of 3.0 for lignite, 1.25 for subbituminous coal, and 1.0 for all other coal.

- Allocation factor for new units entering existing-unit pool: average of one-to-three highest complete operating years, depending on the number of years available, of converted heat input data (gross electrical output converted to heat input using factor of 7,900 Btu/kWh) for the five-year baseline period beginning six years prior to the allocation year. New units first entering the existing-unit pool in the 2015 allocation year would be those that began operation in 2009-2012; the effective baseline period for allocation of 2018 allowances to those units would be 2010-2013. New units first entering the existing-unit pool in the 2016 allocation year would be those that began operation in 2013; the baseline period for allocation of 2019 allowances to those units—and to units that first entered the pool in allocation year 2015—would be 2010-2014. New units first entering the existing-unit pool in the 2017 allocation year would be those that began operation in 2014; the baseline period for allocation of 2020 allowances to those units—and to units that first entered the pool in all previous allocation years beginning 2015—would be 2011-2015. Pattern continues indefinitely.

- Source of baseline data:

  New units: gross electrical output data, certified by the CAMR designated representative, and reported to the DEP for each year 2010-on by March 1of each year 2011-on, respectively.

  Existing units (pre-2009): unit-level heat input data, by coal type, derived from DEP annual operating report (AOR) data.

- Allocation process: DEP allocates allowances for control years 2018-on by late 2014-on, respectively, and submits to EPA by October 31, 2015-on, respectively.

CAMR SCHEDULE

1. Workshop comments due – March 17, 2006
2. Notices of proposed rule development expected to be published -- March 17 2006
3. Draft proposed rule language expected to be available – April 6, 2006
4. Rulemaking workshop – April 13, 2006, Tallahassee
5. ERC rule adoption hearing – June 29, 2006
6. CAMR 111(d) State Plan (SIP) due to EPA – November 17, 2006

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Demonstration that Conceptual Proposal Complies with State EGU Mercury Budget
March 2, 2006

The DEP conceptual approach for implementation of CAMR would not require additional controls on electric generating units (EGUs) less than or equal to 175 MW nameplate capacity. Using EPA's unit-by-unit mercury emission estimates for 1999 found at http://www.epa.gov/ttn/atw/combust/utiltox/utoxpg.html:

Scholz Units 1 & 2 could continue to emit 15 lbs/yr total;
Crist Units 4 & 5 could continue to emit 30 lbs/yr total;
Lansing Smith Unit 1 could continue to emit 58 lbs/yr; and
Central Power and Lime Unit 1 could continue to emit 0.5 lb/yr (rounded to 1 lb/yr).

Together these exempt units could continue to emit 104 lbs/yr of mercury.

Beginning 2013, all of the following units would be required to meet the NSPS-equivalent emission limit of 21 x 10^{-6} lbs mercury / MWh:

Big Bend Units 1-4	combined capacity of 1,824 MW
CD McIntosh Unit 3	capacity of 364 MW
Cedar Bay Unit 1A	capacity of 270 MW
Crist Units 6 and 7	combined capacity of 947 MW
Crystal River Units 1, 2, 4 & 5	combined capacity of 2,485 MW
Deerhaven Unit 2	capacity of 251 MW
Lansing Smith Unit 2	capacity of 205 MW
Polk Power Unit 1	capacity of 260 MW
Seminole Units 1 & 2	combined capacity of 1,430 MW
St. Johns River Units 1 & 2	combined capacity of 1,360 MW
JEA Northside Units 1 & 2	combined capacity of 596 MW
Stanton Units 1 & 2,	combined capacity of 936 MW
Indiantown Co-Gen Unit 1	capacity of 330 MW

These controlled units have a total nameplate (maximum) capacity of 11,258 MW. Factoring this maximum capacity by a conservative 80% annual operating rate and the NSPS-equivalent mercury emission standard level for bituminous-fired units gives:

11,258 MW (0.8) (8760 hrs/yr) (21 x 10^{-6} lbs mercury / MWh) = 1,657 lbs/yr

Adding the exempt units' 104 lbs/yr estimated mercury emission to the 1,657 lbs/yr estimated mercury emission for the controlled units gives a total estimated annual emission of 1,761 lbs/yr.

Florida's EGU mercury budget under CAMR for 2010 through 2017 is 2,466 lbs/yr; therefore, the estimated amount of emission available for new source growth and increased capacity utilization of existing units from 2013 through 2017 is:

2,466 lbs/yr – 1,761 lbs/yr = 705 lbs/yr

The amount of new/increased capacity that could be added can be determined by back calculation:

705 lbs / [(21 x 10^{-6} lbs Hg / MWh) (0.8) (8760 hrs/yr)] = 4,790 MW, or about 4.8 GW

The December 2005 Public Service Commission Review of Ten-Year Site Plans estimates that a total of about 4 GW in new coal-fired capacity will come on-line in Florida between now and 2014; therefore, the NSPS-equivalent limit appears just strict enough to assure compliance with the CAMR state budget through 2014, but possible new coal-fired units coming on-line from 2015 to 2017 could result, at least on paper, in total mercury emissions above the state budget.

In reality, most controlled units are expected to emit mercury well below the NSPS-equivalent limit. Long before 2014, the DEP will be able to confirm this expectation based on the CAMR-required mercury emission monitoring scheduled to begin in 2009. To provide further assurance to EPA that the state plan is protective of the state budget through 2017, the DEP will conduct an updated evaluation of actual and projected mercury emissions to verify that mercury emissions will remain below the state budget through 2017. This will be done as early as possible after the beginning of the control program and upon acquisition of sufficient emissions monitoring data.

The temporary exemption from control requirements for certain units during the proposed three-year transition period also will not threaten the state mercury budget. From 2010 through 2012, the proposed conceptual approach would allow facilities with multiple units greater than 175 MW to defer controlling some units as long as units comprising at least 50% of the nameplate capacity of the facility are controlled to the NSPS-equivalent level. As before, Scholz Units 1 & 2, Crist Units 4 & 5, Lansing Smith Unit 1, and Central Power and Lime Unit 1 could continue to emit 104 lbs/yr. In addition, Crystal River Units 1 & 2, TECO Big Bend Units 1 & 2, and Crist Unit 6 could continue to emit at their current levels through 2012. In this scenario:

> Adding the EPA 1999 mercury emission levels from Crystal River Units 1 & 2 (76 lbs/yr + 125 lbs/yr), Big Bend Units 1 & 2 (42 lbs/yr each) and Crist Unit 6 (69 lbs/yr), to the previous total of 104 lbs from exempt units = 458 lbs/yr of mercury from uncontrolled units.
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> Removing the nameplate capacities for Crystal River Units 1 & 2 (441 MW + 524 MW), Big Bend Units 1 & 2 (446 MW each), and Crist Unit 6 (369 MW) from the total controlled nameplate capacity of 11,258 MW = 9,032 MW. Then:
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> 9,032 MW (0.8) (8760 hrs/yr) (21 x 10^{-6} lbs mercury / MWh) = 1,329 lbs/yr estimated mercury emissions from controlled units

Adding the exempt and temporarily uncontrolled units' 458 lbs/yr estimated mercury emission to the 1,329 lbs/yr estimated mercury emission for the 2010-2012 controlled units gives a total estimated annual emission of 1,787 lbs/yr for the three-year transition period—still well below the 2,466 lbs/yr state budget and with room to accommodate all coal-fired units expected to come on-line between now and 2014.