

**Clean Air Act Advisory Committee**  
**Permits/New Source Review/Air Toxics Subcommittee**  
**Utility MACT Working Group**  
**Suggested Additional IPM Analysis 06/18/02**

At the Clean Air Act Advisory Committee (CAAAC) Utility MACT Working Group meeting held on June 3, 2002, Larry Monroe (Southern Company) summarized a list of suggested changes to the EPA Base Case 2000 mercury modeling assumptions that were discussed at a May 30 workshop. These suggested changes included revised assumptions related to mercury control and regrouping of model run years. EPA agreed to consider these changes and also to provide the timeframes needed to implement any changes. EPA has not made any decisions on implementing the changes, but has provided below the timeframe needed to implement these changes and other analyses to address the concerns raised by the suggested changes should the decision be made to make the change. The timeframes provided below only include the time required to develop the capability to address the issues raised; they do not include the time required to rerun all the MACT scenarios. We have also indicated those changes we might propose to do.

The following are the changes suggested by Working Group members:

- Update activated carbon injection (ACI) cost and performance for cold-side ESP (no spray cooling, limited performance)
- Offer more menu choices (removal rates) for ACI
- Update SCR-FGD co-control
- Update base co-control emission modification factors (EMFs)
  - S Separate EMFs of lignite-fired power plants from subbituminous power plants
  - S Use latest ICR evaluations
- Drop SNCR effects on mercury
- Model run year timing

1) Update ACI cost and performance for cold-side ESP (no spray cooling, limited performance).

Updating the ACI costs to remove SC or add FF could be done in six weeks from the date of data availability. EPA is still in the process of examining the effectiveness of spray cooling in combination with ACI and the performance achieved by cold-side ESP/ACI combinations and does not propose to make this change at this time.

2) Offer more menu choices (removal rates) for ACI.

In the EPA Base Case 2000 only ACI with 80% removal rate is provided as a retrofit option. Providing additional menu choices such as ACI with 70% and 90% removals simultaneously within the model is expected to make the model too large to run. We suggest that we approach this issue by implementing the following:

Reduce existing model size – EPA Base Case 2000 provides SNCR technology options to every coal plant. We have noticed that SNCR technology is not a major control technology of choice in most of our analyses. Thus, this option could be dropped from the menu of compliance choices for coal plants larger than 100 MW. For similar reasons, we also suggest that gas reburning technology options not be provided to coal power plants.

An additional option to reduce model size is to reduce the number of run years from five to four. These model size reduction options could allow EPA to endogenously model ACI with two removal rates. EPA is proposing to a 60% removal and 90% removal for ACI. With the 90% removal option, we could include the addition of a pulse-jet fabric filter for units with hot-side or cold-side ESPs.

The above methodology would greatly improve the mercury modeling capability and reduce the possibilities of over compliance of mercury removal and address member's concerns regarding this issue. We estimate that it will take three months from the date when the data will be finalized to implement this approach. If there are still instances of over compliance of mercury removal, the extent of over compliance can be estimated offline based on model outputs.

2) Update SCR-FGD co-control; Update base co-control (separate lignite from subbituminous and use latest ICR evaluations); and drop SNCR effects on mercury.

Changes to mercury co-controls provided by existing or added NO<sub>x</sub>, SO<sub>2</sub>, and PM controls can be implemented in a reasonable period of time. These will result in changes to EMFs and, hence, will influence the retrofit choices that need to be provided to a model plant. Retrofit choices might need to be added in IPM where none existed before (e.g., SCR+FGD may need an ACI choice). These options can be implemented within 4-6 weeks if the cost and performance of ACI does not change.

EPA is proposing to make the change to institute separate EMFs for lignite and subbituminous units and update the EMFs using the latest ICR evaluations. EPA is also proposing to update its SCR+FGD for other coals and its SNCR+FGD assumptions with the alternative emission modification factors (based on EIA mercury removal assumptions) provided in Appendix 5 of EPA's IPM documentation. EPA is not proposing to change its assumptions for SCR+FGD co-control for bituminous coals until ongoing testing at units with these configurations has been completed.

3) Model run year timing.

Model run years can be changed in a short period of time. It should be noted that because all the years mapped together take on the same dispatch characteristics (the average across the grouped years), it is usually advisable to place the output year in the middle of the years that are mapped together.

EPA is unclear whether this change to model runs will address the member's concerns. EPA believes that the members are concerned that annualizing total costs over a 30-year period is unrealistic. Limiting the run years does not address this issue; rather changing the book-life of a retrofit used in the model addresses the issue and this is not being considered for change at this time.