

Meeting Minutes

WRAP Stationary Source Joint Forum
June 2-3, 2004 @ Denver, Colorado

The Stationary Source Joint Forum convened at the Adam's Mark Hotel in Denver, Colorado at 1:00 PM June 2nd and met through 3:00 PM on June 3, 2004. The Meeting Agenda, PowerPoint Presentations and a list of Attendees are all posted on the WRAP website.

Meeting Summary

On June 2-3, 2004, I attended a meeting of the new WRAP Stationary Source Joint Forum (SSJF) held in Denver, Colorado. This meeting was held to update the Forum membership on tasks facing the Forum now that the option of national Utility regulation under the Clean Air Interstate Rule (formerly known as the Interstate Air Quality Rule: IAQR) has been taken off the table.

To begin the meeting we talked about BART-Eligible Sources; hearing a presentation on the background of the BART regulation and the status of the SSJF's BART-Eligible Source Identification Project. It was pointed out that identification of BART-Eligible sources is a requirement for states specifically called out in the Regional Haze Rule, and to date, the WRAP has only identified BART-eligible sources that emit SO₂, and then only for the SO₂ BART-eligible sources within the 9-state Grand Canyon Visibility Transport region addressed under §309 of the RHR. Under §308 we now need to address all pollutants (NO_x, PM & VOC) for all 14 states within the WRAP, as well as address SO₂ for those states that didn't adopt §309 SIP's. A contractor has been hired for BART-Eligible Source Identification Project, and they are providing assistance to the WRAP states in developing the database listing of the BART-eligible sources within the region.

EPA representatives then gave a presentation on the status of EPA's actions on revision of the Regional Haze Rule and the BART Guidelines. EPA re-proposed the BART Guidelines earlier this year, and comments are due back to EPA by July 6th of this year. The proposals include methods of exemption from formal BART analysis for individual source using CALPUFF modeling and a 0.5 dV impact threshold. EPA is taking comment on using some "less burdensome" alternatives for the exemption methodology. Regarding determination of BART controls, EPA is proposing a process similar to a "top-down" BACT analysis. And there are "presumptive" control levels for Fossil Fuel Fired Power Plants >250 MW's generating capacity, at power plants which are greater than 750 MW's in total size. Regarding "Alternatives to BART", EPA will require that any alternative trading program must either show greater overall emission reductions (similarly geographically distributed to BART), or show greater overall visibility improvement than case by case BART implementation.

A SSJF sub-committee has been working the past couple of months to examine these proposed BART Guidelines, and identify potential WRAP concerns. The Forum heard a presentation highlighting the issues that this Workgroup has raised, and discussed how to proceed in providing formal comment from the WRAP. It was pointed out that the whole discussion of BART is moot if the WRAP eventually decides to use an "Annex-like" market approach which applies to all significant sources.

There was a discussion on the "Next Steps" the SSJF should pursue in defining "Alternatives to BART" such as an inter-pollutant or inter-sector trading program. There was discussion on whether a *backstop* trading program is an option under §308, and it was agreed that the answer to this question would go a long way in terms of providing future direction for the Forum.

EPA Staff from RTP, joined the meeting by phone in the morning of June 3rd, to discuss the Clean Air Interstate Rule (CAIR). Lydia Wegman confirmed that the EPA had made the decision not to extend the IAQR to the west, mainly because Administrator Levitt felt that the complexity of such expansion would make it problematic to get CAIR completed by a deadline at the end of 2004. The EPA hasn't ruled out a national regulation at some time in the future, but they felt that they wouldn't work on that before CAIR is finalized. The EPA had conducted several analyses on impacts of western expansion or the rule, and this date they did share results of some of these analyses. They had looked at combustion control of NO_x, and found emissions rates could be reduced to around 0.2 lb/MM BTU nationally with this technology, even if the expenses were capped at \$1300/ton. They had looked at national SO₂ Emission Cap, with a nested Western Cap that would cost approximately \$280MM to implement through 2015. They had done some analyses of incorporating utilities into the SO₂ program within the 5 WRAP §309 states, the 9 WRAP GCVTC States and the 13 continental WRAP states; and they shared some of the results of these varying control schemes. It was agreed that the EPA work provides a starting point for the Forum to begin analyzing western Stationary Sources emission control schemes.

Besides utilities, the WRAP has concerns with the impact of Oil & Gas activities in the WRAP region, and it was noted that the O&G industry is likely the second largest source of NO_x in the WRAP region. Discussions were held regarding how to proceed with analysis of this relatively undefined emission sector in the west.

The group then heard an update on the WRAP's Attribution of Haze project, and it was noted that the workgroup's mission was to identify the geographic source of emissions, the mass and species distribution of emissions by source category, and the natural vs. anthropogenic split of emissions affecting each of the WRAP region Class I areas. The initial Attribution report will be completed by the end of 2004, and that is anticipated to provide some guidance on how significant stationary sources are in the western Regional Haze picture.

Finally attendees held a discussion on the 2005 Workplan for the Stationary Sources Joint Forum. NO_x and SO₂ dominate the concerns that the SSJF has identified from stationary sources, and the majority of these emissions are suspected to be generated by the Utility and the Oil & Gas industries. WRAP staff will work to get a draft workplan together for Forum Review, before incorporating that work into the overall WRAP workplan development process this summer.

Meeting Details

★ BART-Eligible Sources ★

To begin the meeting Lee Alter gave a PowerPoint presentation on the background of the BART regulation, and the status of the SSJF's BART-Eligible Source Identification Project. He noted that identification of BART-Eligible sources is a requirement for states specifically called out in the Regional Haze Rule. To date, the WRAP has only identified BART-eligible sources that emit SO₂, and then only for the SO₂ BART-eligible sources within the 9-state Grand Canyon Visibility Transport region addressed under §309 of the RHR. Under §308 we now need to address all pollutants (NO_x, PM & VOC) for all 14 states within the WRAP, as well as address SO₂ for those states that didn't adopt §309 SIP's. The SSJF has now hired Eastem Research Group (ERG) under a contract to provide assistance to the WRAP states in developing identification methodology and confirming identification of sources in this BART identification task. The final product will be a database listing of the BART-eligible sources within the WRAP region.

Regarding project progress, Mr. Alter indicated that ERG has been working to established state contacts and has identified various databases that contain relevant information (EPA's Title V, NEI and Acid Rain databases; the Energy Information Administration [EIA] data, the California District Rules database & ITEP tribal source data). They have been refining the lists of SIC, SCC and MACT codes for identifying sources, drafting common methodology for identifying sources, looking at specific methods for California and for tribal sources. They also have been surveying states to compile the preliminary list of BART-eligible sources, with 8 states currently having submitted this preliminary data (NM, CO, UT, ID, MT, ND, SD, WA & AK). Thus far ERG has found that fossil fuel fired power plants dominate the BART source list for total emissions of all pollutants, except for VOC's. VOC's are dominated by petroleum refineries, w/ EGU's the second largest emission source for this pollutant.

The next steps include finalizing design of the mechanism for incorporation of the BART list within the WRAP's EDMS emission database, completing verification work on the current BART information, gathering further emission control information, plotting these sources on maps, consulting with other RPO's, and talking with EPA about the special case of California BART sources. The other RPO's are also working on this BART identification task for their respective regions, and as described in Mr. Alter's PowerPoint presentation slides, they are having various degrees of progress in compiling this information.

Regarding emissions of NH₃, VOC's & PM, there is a body of information which suggests that these pollutants may not be significant contributors to regional haze degradation. Given the concurrent reductions of NO_x and SO₂, under the current BART proposal, EPA would exempt NH₃ entirely. Regarding VOC's, they are also taking comment on giving less attention to rural sources, while focusing more closely on urban sources of VOC's.

As an alternative approach to conducting detailed BART analyses for emissions control of NH₃, VOC's & PM, one would first compare the magnitude of these emissions from BART-eligible sources against

the total anthropogenic inventory. Second, the level of current emission controls would be determined at these sources. Then the probable impact of these emissions would be determined based on the best available science (monitoring, modeling, etc). If emissions of these three pollutants from all BART-eligible sources in the region comprise a small part of the inventory and they are currently reasonably well controlled; and/or if the emissions aren't reasonably anticipated to significantly affect visibility, then further BART analysis or control these subordinate pollutants would not be necessary.

★ EPA Re-Proposal of the RHR and BART Guidelines ★

Kathy Kaufman then gave a presentation on the status of EPA's action on revision of the Regional Haze Rule and the BART Guidelines. She described the history of the Corn Growers' suit and the 2002 District Court ruling on BART guidelines. She noted that EPA has now re-proposed the BART Guidelines, with comments due back to EPA by July 6th of this year.

She explained that the court only required EPA to provide a mechanism for exempting individual BART-eligible sources from BART analysis based on visibility impact, but left states the option of choosing to subject all these eligible sources to formal BART analysis. To exempt a particular source under the current EPA proposal, the guideline mandates use of CALPUFF modeling. Results must show negligible impact (> 0.5 dV for all 24 hour periods in the year), in order to exempt a BART-eligible source on the basis of visibility contribution. But Ms. Kaufman noted that EPA is taking comment on using one of four less burdensome alternatives (CALPUFF Screening, Look-Up Tables, Source Ranking and an Emissions \div Distance Factor).

Regarding the BART determination, she noted that the process is similar to a "top-down" BACT analysis, considering the five statutory factors (costs, remaining useful life, energy & non-air quality impacts, existing level of control and degree of visibility improvement). The question was raised as to the difference between BART and BACT analyses. It was pointed out that costs would likely be higher for retrofit than they would be for achieving similar control in new construction. And the "remaining useful life" of an existing source will typically be less than for new construction, thus exacerbating the amortized cost differential for a given control level. With these differences, it is suspected that the top levels of control options will be eliminated more quickly under a BART analysis, than when considering BACT.

There was discussion that Dust & Fire inventory elements tend to distinguish the Regional Haze "problem" in the west, whereas the Stationary Point Sources are much more dominant in the eastern half of the country. Pat Cummins pointed out that we will much more likely be using the Stationary Source controls as a component of Reasonable Progress, than we will be using BART determinations for fully resolving Regional Haze questions.

Regarding Fossil Fuel Fired Power Plants, Ms. Kaufman explained that EPA has established "presumptive" control levels for those units with >250 MW's generating capacity, at power plants which are greater than 750 MW's in total capacity. For SO_2 , EPA is proposing either a 95% control efficiency, or emission rates down to the 0.1 to 0.15 lb/MM Btu range. For NO_x , all BART-eligible EGU's

currently using SCR for the ozone season, would now have to extend use of that technology for the full year around. For those sources currently operating without SCR, the proposal calls for emission rates 0.2 lb/MM Btu NO_x emission rate. Her presentation slides show several examples of potential BART determination and exemptions.

★ Alternatives to BART ★

Kathy Kaufman then continued her presentation, offering information on EPA's perspective for "Alternatives to BART". She noted that any alternative trading program must either show greater overall emission reductions (similarly geographically distributed to BART), or show greater overall visibility improvement. Under this second option, visibility modeling must show that visibility will not decline at any affected Class I area in the WRAP Region, and that the average visibility is better at all affected Class I areas under the alternative. She noted that any alternative program must be implemented during the first planning period (by 2018).

It was clarified that the 1999 Regional Haze Rule requires that any BART alternative provide "greater reasonable progress", rather than simply just "more visibility improvement" than BART. The distinction revolves around the fact that there are additional "factors" that come into play when evaluating reasonable progress, rather than simply considering absolute visibility improvement. The main difference is the "timing" of the improvements, which can be considered under RP, but not under BART (must have an absolute 5 year implementation schedule). Also RP need not consider the "existing pollution controls" on a stationary source, while BART can take that factor into account.

It was pointed out that the SSJF must look to determine whether they will recommend that the WRAP pursue some BART alternative. Because of the experience of the significant time and effort expended in developing the Annex Milestones program under §309, Pat Cummins felt that in order to provide states with a trading option under the §308 time-table, the Forum must act fairly rapidly to make a decision on the direction that they will go.

★ RH BART Key Issues ★

Continuing the meeting, Eric Massey explained that there has been a SSJF sub-committee working the past couple of months to examine the BART Guidelines, and identify potential WRAP concerns. Eric Massey gave a presentation highlighting the issues that this Workgroup has discussed. These issues are further described below:

NSPS May Not Satisfy BART - EPA is arguing that some recent emission control retrofits have achieved lower emissions than NSPS levels, thus implementing NSPS alone may not satisfy BART. The Forum was concerned about the implication that if this is true, a new source meeting NSPS control levels may actually have greater emissions than a BART retrofit on a similar type of unit. The point was made that new sources probably wouldn't receive NSPS limits without a thorough BACT analysis however, so this illogical scenario was highly unlikely.

Required Use of BART Guidelines - The WG was concerned that the EPA mandate for sole use of the BART Guidelines might limit State/Local/Tribal discretion, which is inconsistent with the principles of the Corn Grower's case.

Pollutants to be Addressed - The WG noted that the current EPA proposal doesn't include ammonia (citing high uncertainty of NH₃ data), and they questioned whether this preempts RA BART for individual sources. The WG wondered whether permitting sources should retain discretion to include NH₃ if accurate data is available.

Also, the EPA proposal does include VOC, even though knowledge of the relationship between VOC and PM_{fine} is still evolving. The WG suggested that the WRAP should request a more consistent approach for NH₃, VOC & PM pollutants.

BART De Minimus Levels - The WG noted that sources deemed to be BART-eligible for one pollutant, are subsequently required to address BART for "any visibility impairing" pollutant. The WG thought that some de minimus level would probably reduce the burden on permitting authorities and sources.

Determining Which BART-Eligible Sources Are Subject to BART - Current options include:

Option 1: determining that all BART-eligible sources are subject to BART

Option 2: using a cumulative approach, states can choose to demonstrate that no stationary sources are subject to BART

Option 3: states may choose individual exemptions from BART

The WG wondered whether a fourth option should allow states to develop some alternative scheme.

Better-than-BART Determinations - The WG questioned whether the guidelines should more explicitly allow other reasonable progress factors to be considered when a "Better-than-BART" determination is made (ie/ Cost, Time to Implement, Energy Impacts, etc).

California Approach - The WG wondered whether BART guidelines should allow for an alternative approach where BART compliance can be demonstrated through evaluation of existing rules and permit conditions. They felt that this could potentially relieve the burden on California and other states with NH₃, VOC & PM issues.

Visibility Impairment Trigger - The WG noted that EPA has proposed a 0.5 dV impact (single 24 hr average) as a threshold for determining whether a stationary source is contributing to visibility impairment. The issue was raised as to whether the WRAP can come to a consensus on an appropriate threshold number. It was pointed out that a source is actually "contributing" if it has a 0.5 dV impact, but others noted that it takes 1 dV to be "perceptible".

Top-Down Analysis - The WG questioned whether a "BACT-like" top-down BART analysis was the most appropriate methodology for determining BART control. EPA is seeking comment on whether a "floor up" approach may be more appropriate, or perhaps some variation of an intermediate control approach.

Four Alternatives for Individual Source Exemption - As noted earlier in this memo, the EPA has proposed four less burdensome alternatives to the 0.5 dV threshold for individual source exemption (CALPUFF Screening, Look-Up Tables, Source Ranking and an Emissions ÷ Distance Factor). The WG wondered whether these steps should be used in lieu of, or possibly as first steps of an exemption analysis.

It was pointed out that this whole discussion of BART eligibility is moot if the WRAP eventually decides that we want to use an "Annex-like" market approach for controlling stationary sources; an approach which takes in all sources with emissions over a defined threshold, regardless of their BART status.

This BART Workgroup is planning to reconvene the week of June 7th to review the results of this meeting. Then they will draft a letter by June 11th and get review from the SSJF members by June 16th. The revised draft will go before the WRAP Board by June 23rd, and final comments will be due by June 30th. Then the final WRAP comment letter on the BART Guidelines will be submitted to EPA by July 6th.

★ SSJF Next Steps on Alternatives to BART ★

Pat Cummins began the discussion by explaining that he feels the SSJF needs to define a general direction that the WRAP should go regarding developing a trading program; including addressing questions such as inter-pollutant trading or inter-sector trading (ie/ area vs point).

It was pointed out that under the §309 Annex, the stationary source SO₂ milestones resulted in less than a ½ dV improvement in visibility at western Class I areas. Given this marginal visibility improvement obtained from stationary sources, there was general agreement that the stationary source sector needs to be viewed not in isolation, but in context with the balance of the total emission inventory for the region and what controls might be possible in these other source sectors. Questions revolve around what's really needed for Reasonable Progress towards the RH 2064 goal, and what is the stationary source sector contribution to visibility impairing pollutants. It was felt that SO₂ & NO_x are the primary pollutants of concern from stationary sources.

It was pointed out that under §309, the Annex was a *backstop* trading program, but the question was raised as to whether a backstop program is an option under §308. Whether the WRAP can have states "opt in" to the current Annex was not conclusively answered during this discussion.

John Nielson suggested that there might be some sort of hybrid trading program for SO₂ developed, where an active program was overlaid on top of the Annex Backstop Program. Options seemed to

include an active cap & trade market trading program, a backstop program and command & control limits on stationary sources.

Vicki Patton felt that there were philosophical reasons why §308 should limit trading to an active system. Conversation revolved around the point that there would be no incentive for states to implement an active system, if they can opt-in to some backstop program.

Frank Prager raised the question as to whether there was any distinction between those §308 states that originally had the §309 option, but didn't accept that option (ie/ Colorado), as opposed to a state that never had the §309 option at all (ie/ Montana). It was pointed out that under the Annex, there were no allowances broken down for state by state distribution, but were simply first given for tribal and new source set-asides, with the balance split between utility and non-utility industries.

★ Clean Air Interstate Rule ★

The CAIR was formerly designated as the Interstate Air Quality Rule (IAQR). This date Lydia Wegman was on the phone, and she confirmed that the EPA had made the decision not to extend the IAQR to the west, mainly because Administrator Levitt felt that the complexity of such expansion would make it problematic to get CAIR completed by a deadline at the end of 2004. The EPA hasn't ruled out a national regulation at some time in the future, but they wouldn't work on that before CAIR is adopted. She noted that the EPA did conduct several analyses on what parameters might be included in any western expansion, and those analyses were forwarded to the WRAP.

John Robbins then described the EPA's NO_x analysis. He explained that they found that 127 Western EGU's had current emissions of 727K TPY NO_x (676K TPY from coal & 51K TPY gas fired units), or an average of 0.301 lb/MM Btu emission rate. Then they evaluated applying "combustion controls" on all units, against applying "combustion controls with a "\$1300/ton maximum cost". The full combustion control scenario resulted in a 35% reduction (251K tons) in the west, but the cost limited controls got almost as much with 34% reduction (247K tons). Thus full combustion control would result in 476K TPY region wide total NO_x emissions (0.197 lb/MM Btu average performance), while the cost limited control option resulted in 489K TPY NO_x (0.199 lb/MM Btu average). Vicki Patton noted that Environmental Defense was somewhat disappointed in the level of emission reduction from combustion controls, and expected emission rates closer to 0.15 lb/MM Btu.

Regarding the SO₂ analysis, EPA used the IPM model to analyze the effects of a national SO₂ cap, with a nested Western Cap. The analysis confirmed that they could get in the range of 400-500K tons SO₂ reduction by implementing a nationwide cap for utilities. The cost of incorporating the Western half of the country in this SO₂ cap is predicted at approximately \$280MM through 2015.

For the 5 WRAP §309 states, EPA modeled a cap of 179K SO₂, at a cost of \$200 per ton. For the 9 WRAP GCVTC States, 267K Tons of SO₂ was used as the cap, coming in at a cost \$260/ton. When they analyzed the 13 WRAP continental states, because North & South Dakota achieve very significant

reductions under a national SO₂ program, they "drain" emissions below the region's 373K ton cap, thus this cap is not binding for these 13 states.

Pat Cummins thanked EPA for sharing these analyses, and noted that the Forum had been discussing whether Backstop programs are allowed under §308. He explained that the WRAP will be asking for more clarification on this point from the EPA, and Ms. Wegman promised to research the issue.

★ Oil & Gas Development ★

Lee Alter then made a presentation on Oil & Gas industry and he noted that the O&G industry is likely the second largest source of NO_x in the WRAP region. It is relatively hard to pull out the exact contribution of O&G from area source inventories because the inventories may have overlapping contribution from O&G mixed in with other emission sources. For example, inventories simply show a total industrial gas combustion, some of which may come from the consumer, rather than at the producer well site. Mr. Alter noted that states currently have different inventory procedures, thus what data is available is that much harder to interpret.

Mary Hilbert then explained how New Mexico is approaching their evaluations of the O&G industry. They have been working extensively in San Juan Basin in Northern New Mexico to address potential ozone problems, and they now have an Early Action Compact in place to look at and minimize emissions from the O&G industry.

Regarding Wyoming, Chad Schlichtemeier noted that O&G is one of the largest components of the Wyoming minor source permitting load. Lee Gribovicz added that Wyoming is dedicating a specific effort to calculating emissions from the O&G field operations by developing specific emission factors for individual field activities (ie/ dehydration, condensate flashing, small heaters, leaking & pneumatic valves and etc).

Dan Walsh explained that Montana also has a minor source permitting program which provides fairly complete analysis of the O&G activities in the state. They have recently completed an EIS for NO_x emissions in a couple of counties, where they had detailed inventories and modeling of O&G activities.

It was noted that since most of the states were tackling the O&G inventory question, that information was expected to be eventually captured in the WRAP EDMS emission database for improved WRAP analysis. There was discussion that there is a hierarchy in significance of O&G emissions, starting with the large interstate pipelines, moving down to the processing and gathering activities, and ending at the field production activities.

The point was brought up that probably NO_x is the pollutant from the O&G industry that most impacts regional haze, but the questions revolving around VOC are not very well defined at this point. It was pointed out that Organic Carbon was right there, along with Sulfates, as the largest two monitored components of haze in the west. But it was also noted that OC comes overwhelmingly from biogenic

emissions, as well as from area and mobile inventory sectors. And once a VOC is in the atmosphere, then it is very hard to determine its specific source.

Pat Cummins suggested that the SSJF needs to establish a workgroup to work closely with the Emission Forum on evaluating this O&G industry, and Lee Alter will contact Stationary Source members to identify a crew for this task.

★ Attribution of Haze ★

Tom Moore gave a presentation of the status of the AoH work, noting that the function of this Workgroup is to identify the geographic source of emissions, the mass and species distribution of emissions by source category, and the natural vs. anthropogenic split of emissions affecting each of the WRAP region Class I areas. They will then prepare "simple" and clear summaries of the attribution results to policy makers, along with complete documentation of all the assumptions, methodology and uncertainties that went into the analysis. This Workgroup has had an initial meeting, and they are moving to obtain contractor assistance in compiling and analyzing various WRAP data (EI's, modeling, monitoring, etc) for the Attribution report.

★ Work Plan Discussion ★

Regarding NO_x, the SSJF has identified the element of O&G evaluation for further attention in 2005. Also Pat Cummins suggested that the Forum needed to consider a contract for a study to identify NO_x emissions and control capability in the Utility sector. A third component of the SSJF task is to analyze the unidentified "other" category of NO_x emissions. It was noted that evaluation of BART and non-BART sources will help to clarify this "other" sector.

Regarding SO₂, we really have to get the BART and non-BART sources identified in the four continental WRAP states that weren't evaluated in the §309 Annex (WA, MT, ND & SD). And the methodology of combining these non-GCVTC states into a market approach with the Backstop Milestones program needs significant work. And it was noted that the SSJF must decide just how wide spread this program will be (5 state, 9 state, 13 state, other???)

Pat Cummins explained that he and the WRAP staff (Tom Moore, Lee Alter) will work to get a draft workplan together. This will be circulated to the SSJF membership for review and comment, before incorporating in the overall WRAP workplan development process this summer.