**REGIONAL HAZE PLANNING WORK GROUP**

**CONTROL MEASURES SUBCOMMITTEE**

**NOTES OF CONFERENCE CALL**

**Tuesday, December 18, 2018**

Notes by Ed Merta, City of Albuquerque

**Attendance**:

Pat Brewer (NPS), Frank Forsgren (NV), Philp Gent (WA), Rebecca Harbage (MT), Craig Henrikson (MT), Aislinn Johns (ID), Kirsten King (NPS), Rob Leteff (WY), Ed Merta(Abq), Tom Moore (WESTAR-WRAP), Curt Taipale (CO), Elias Toon (AZ), Don Shepard (NPS), Kerwin Singleton (NM), Tina Suarez-Murias (CA).

**Action items that resulted from the call**:

* Curt will be following up with individual state and local agencies, probably by email, to get a sense of what their views are on the notion of fifth factor analysis.
* Curt will send out a revised version of the Draft Protocol soon by email.
* Curt will send a Doodle poll to schedule a Control Measures subcomittee call for the week of January 7. That call will review the scope of work document that Ramboll will be providing for Q/d calculations and related work.
* Tina will consult with Curt and Tom about the logistics of getting Work Group-wide feedback on the Draft Protocol.

**Other decisions**:

* Curt’s goal is to have the Draft Protocol “fairly finalized” by the end of January, so that states can move on to notify sources of requests for detailed cost information on control measures potentially available to those sources.

**DISCUSSION OF AGENDA ITEMS**

**1. Request a volunteer to take notes.**

Ed volunteered.

**2. Review of meeting notes from last call on Nov. 26th. (attached)**

The group had no suggested edits.

**3. Review of Salt Lake City meeting and CM discussion**

Curt provided an update on the December 4-6 WRAP Technical Planning meeting in Salt Lake City, with a focus on control measures. A key topic that came up at the meeting is the timing for Weighted Emissions Potential (“WEP”) modeling. Other topics addressed included possible modeling for “fifth factor” visibility analysis and securing a contractor to do a Q over d (“Q/d”) analysis as discussed in our subcommittee’s current Draft WRAP Reasonable Progress Source Identification and Analysis Protocol (“Draft Protocol”).

Curt segued to the overall takeaway for discussion on this call: the overriding goal for states now is to identify reasonable progress sources “fairly early next year” so that states can craft letters to these sources, informing them they will be subject to four factor analysis. The sources will need to get started on the cost analysis that will be unique to each facility and very labor intensive. The earlier we can get these sources on notice that they need to do the work the better. Time is running short – the overall goal is to have four factor analysis done for each source by the end of 2019.

So states need to get going as soon as possible, but it’s important to realize that WEP analysis by WRAP will not be complete until the spring of 2019. That means WEP is off the table as far as being useful for initial identification of reasonable progress sources – at this point Curt paused to double check with others on the call as to whether or not he was correct on this.

Tom concurred with Curt’s assessment. He added that if you’re going to analyze a source using, for example, a HYSPLIT analysis/WEP trajectory to estimate the source’s visibility impact on a Class 1 Area (“C1A”), then 2014 emissions data isn’t the best data to use. So a WEP analysis with 2028 “rules on the books” projections is probably the best way to go. However, Q/d does at least give us a very objective recent year (2014) to show relation of emissions to distance.

Curt noted that the current Draft Protocol does place a lot of emphasis on WEP, but time is short – letters need to go out very soon to sources identified by Q/d as being required to do four factor analysis. Curt is inclined to leave the WEP related material in the Draft Protocol but further clarify that WEP will not be viable to use quickly as part of the initial identification of sources. Curt said that the WEP analysis won’t be available until sometime in April 2019. So sending out letters to sources can’t wait for the full 3-step process described in the Draft Protocol. Instead the letters will be based on a 2-step process to identify the sources, after which the state will have to get letters in the mail to the permittees, alerting them to begin the four factor process. The urgency of getting these letters out was a major topic at the Salt Lake meeting, Curt said.

Another key topic was fifth factor visibility analysis of individual sources and possible modeling products that could be used to do the analysis, e.g. SCICHEM. The Salt Lake participants talked about whether SCICHEM could be put onto a web site, thus allowing states to run the model on their own, for their own fifth factor analysis. Curt said there was no final conclusion on how feasible it would be to do that. If it is, this would help states do their own individualized model runs, which seems to be more appropriate than WRAP performing such modeling. Curt wasn’t sure how much cost would be involved in putting a model like SCICHEM online for states to use.

Curt also indicated that the larger Regional Haze Planning Work Group will have to promote dialogue among WRAP states to see if there’s a general consensus on whether to pursue fifth factor analysis. It was Curt’s impression that Federal Land Managers (FLMs) seem inclined to go with EPA’s default recommendation, which is NOT to do a fifth factor analysis as part of state SIPs.

Curt related that on the last Control Measures subcommittee call before this one, he asked for state and local air agencies on the call to get back to him with the number of sources they would be interested in submitting for a fifth factor analysis. Only two states and one city responded. Curt reported that Aislinn from the Idaho Department of Environmental Quality indicated her agency is less interested in a fifth factor analysis.

**Action item**: Curt will be following up with individual agencies, probably by email, to get a sense of what individual state and local agency views are on the notion of fifth factor analysis.

**Action item**: Curt will send out a revised version of the Draft Protocol soon.

Kirsten stated that NPS has strong feelings that if an agency is going to do fifth factor analysis, it should use EPA guidance as the basis for doing so. Don of NPS added that if a state wants to do a fifth factor analysis, it should look at the EPA Region 6 approach used for Texas – he couldn’t remember the model used but it was a photochemical grid model (“PGM”). Kirsten noted that EPA hasn’t yet changed the draft 2016 guidance so NPS was standing by that version of the guidance.

Curt responded to Kirsten and Don that using a PGM for fifth factor analysis would be extremely expensive. Curt wondered if a PGM approach would be practical given the number of sources and C1As to be analyzed. Given those numbers, is the necessary number of model runs even possible? Curt said he wanted to “flag” this approach as impractical, based on funds spent during the first Regional Haze planning period compared to the much more constraining amount of funds available this time around.

Tom agreed with Curt’s assessment. He said he appreciates what the NPS folks are saying. He said that the 2016 guidance is coming to seem “like fine wine” at this point, i.e. valuable but perhaps expensive or impractical.

Tom made further comment on the issue by discussing the larger planning context. In order to set reasonable progress visibility goals at the culmination of the planning process, it’s important to do regional modeling of additional controls beyond those on the books. That will mean modeling of control measures chosen by the states in late 2019 or early 20220, based on four factor analysis for individual sources. A full, regional modeling run would account for the totality of what states are considering as far as new control measures. The result will be a model of a strategy, a percent reduction in SO2 or NOx from sources in each state. It’s important to understand what the overall regional impact will be, in terms of emission reductions, if all the strategies were implemented. But the permitted emission limits (i.e. emission limits in a permit for a source) will be up to each individual state. Trying to use PGM to decide which sources to analyze at all would require a huge amount of effort and time. A simplified analysis like Q/d can drive the initial sorting process. Then by late 2019 or early 2020 WRAP will need feedback from all states on the possible percent of emission reductions by permitted sources that we believe we might be able to get in our permit process as a result of SIP control measures chosen via four factor analysis.

Kirsten stated that NPS is fine with Q/d but has concerns about visibility modeling for fifth factor analysis.

Tina stated her understanding of the role of fifth factor analysis. She thought that it comes in when a state has already selected sources for four-factor analysis, then looked at the possible reduction strategies the state might have available. At that point, the state then can use visibility as a fifth factor, looking at whether there was a difference among control strategies in how much visibility improvement each would bring. California used this approach in justifying BART control levels during the first planning period. California wanted control strategies that would have more than half a deciview of visibility impact, because this would be perceptible. But if a control strategy showed, for example, a 0.7 or 0.9 deciview impact, but also a tremendous difference in cost, California would take that into account in its BART planning.

Tina asked whether that is what we are all thinking – once we’ve identified sources for four-factor analysis, we’d want to know whether or not having information on visibility impact would be helpful when making the decision on which control strategy would be be most effective. She stated that California has an advantage in such planning, in that it has an in house modeler who thinks he can still run CALPUFF. That model offers a straightforward way to compare visibility impacts of control measures at individual sources. Other states might not be able to match that capability, however.

Tina stated that the key for doing any fifth factor analysis is Curt’s point about how many big sources are we really talking about. We need to get that information from states, as Curt said.

Curt then asked if other states have thoughts on what we do here. He reiterated that he will send out a new Draft Protocol and also request views from states on fifth factor analysis. He would ask not only for their general feelings on fifth factor modeling but also specifically how many sources they have that would need to be modeled. Having a hundred sources to analyze would involve a lot of money and it would be good to have a sense of the funding requirements we’re looking at as soon as possible.

Curt agreed with Tina’s depiction earlier, in which she said that we’re not talking about using fifth factor visibility analysis to screen source out of any control measures analysis altogether. Instead, fifth factor visibility analysis would entail visibility impacts modeling once the four factor analysis is complete, as a way to help decide on whether or not a source should be required to adopt a particular control. Curt stated that another important question in all of this is how accurate the fifth factor models are.

Kirsten stated that there’s a danger in setting things up so that if you talk to a source then you can only choose controls for the source that are shown to have to have a positive visibility impact. As we get closer to natural visibility conditions at C1As, there will increasingly be no big sources left to analyze. Thus, there won’t be a noticeable visibility impact of different potential controls at each individual source. Instead, small individual contributions will have a cumulative, total impact that adds up to being significant.

Don added remarks on the 2016 EPA guidance. The intent of the guidance was that states could certainly use visibility modeling to select sources that would be subject to four factor analysis. The guidance also presumed that once a state did the four factor analysis for possible control strategies, it would run a PGM model to see what the emission reduction and visibility improvement payoff from controls would be. But the intent of the guidance was that a state would not use visibility as another factor on top of the four factor analysis. The text of the federal Clean Air Act says that five factors can be used for BART analysis but only four factors can be used for determining reasonable progress goals. The CAA does not intend for visibility to be used as a fifth factor in selecting controls outside the BART context.

Curt agreed that in future rounds of Regional Haze planning, states are going to look to EPA to provide more nuanced guidance, specifically on when they can transition from planning based on analysis of big point sources to analysis of multitudes of smaller or area sources. That future will present a new regulatory environment more akin to California’s experience, but it is not what most West states have experience with today. Regulating categories of sources is much more challenging than just regulating the big sources. EPA will have to help states through this transition, which will be a matter to be considered in future planning periods once all the “low hanging fruit” has been picked.

Tom added that, as a technical matter, Don mentioned EPA’s re-analysis of Texas reasonable progress work. Tom would say that sources in Texas are really quite different. Those decisions by EPA were heavily litigated. It would seem that Western states will need to find our own way, one that doesn’t rely on the approach taken in a single large industrial state like Texas. The WRAP approach sees photochemical modeling as the basis for analysis of the cumulative visibility impact of control strategies that states are actually considering as of the end of 2019. PGM will quantify that impact as deciview values, which states can consider in their individual SIP processes. Tom said WRAP has made no decision to implement modeling of the visibility impact of individual sources. Individual states can look at doing that on their own if they want.

Curt summarized Tom’s remarks, which to Curt meant that WRAP will certainly be doing a PGM run that provides visibility impacts at all C1As projected to 2028. These impacts became reasonable progress goals for each C1A. The emission inventories in that modeling will reflect all the state’s emission control rules that the state thinks are going to happen and the total emission reductions they think will result.

Curt moved the discussion to a new topic, which was conversations at the Salt Lake meeting about having a contractor do all the Q/d analysis for states in a consistent way, including putting the results in a pivot table. States currently seem to doing their own Q/d calculations different ways. Curt reported that he and Tom have already talked to a potential contractor about doing Q/d work for all the states according to a uniform methodology.

Curt reiterated the overarching goal of doing the Q/d calculations: getting a fairly quick list of sources to be notified that they must submit control cost information to state agencies. Curt assumed that states don’t already have that information. Ramboll will prepare a scope of work for what would be entailed in doing the Q/d calculations for states. Ramboll will get this scope of work done by early January. Once it’s ready, the Control Measures subcommittee can then have a phone call to talk about and approve the scope of work Ramboll has come up with. After that a contract can be concluded. WRAP would get results of the Q/d calculations to states by the end of February.

Curt asked whether persons on this call could do another call the week of January 7 to talk about getting Q/d work done by a contractor.

Frank strongly supported the contract work that Curt described. Frank said the Q/d data will be really helpful for states that have visibility impacts at a C1A outside their borders or experience out of state impacts at one of their own C1As.

Tina said she had heard about a list of when individual sources had last gone through PSD/NNSR. The list showed at what point in time the most recent level of control had been put on a source. For example, maybe a source had been required to install RACT controls in 1985. Such a list would be helpful in analyzing whether the specified level of control is sufficient for Regional Haze purposes. She asked whether this could be part of the contractor work described by Curt.

Curt replied by saying that the scope of work will include “that sort of work.” But what he envisioned would be more a road map for the period after sources subject to four factor analysis are identified. The road map will offer a framework a state could look at to determine when controls were most recently analyzed and required at a source, so that a state could determine whether or not a four factor analysis would be necessary for that source. A key factor would be how recently the consideration and requirement for new controls actually was. The framework envisioned by Curt would also address how BART analysis of a source in the first planning period, or lack thereof, might affect the need for the source to go through four factor analysis. .

Tina observed that a framework saying a state needs to examine controls imposed on sources in the past seems to be “a no-brainer” – states already know they need to look at this. What’s helpful are the actual numbers, i.e. when the controls were considered and imposed.

Curt responded that if we have a contractor do that kind of work, the contractor would have to contact permit staff at state agencies for details on controls that are in place. It would be expensive for a contractor to do this.

Tina asked what the value added would be of contract work that simply presented a framework noting the need to examine past controls.

Tom replied that not everyone doing Regional Haze planning has the same experience as some of the people on today’s call. And so it would be useful if the small contract we’re looking at for Q/d calculations also documented mandatory planning considerations and structured them in rank order. Doing that could help states with a lot of personnel who haven’t done Regional Haze planning before. This will be a minor part of the overall work but getting it down on paper in logical order is helpful. Doing so will create a common understanding among local agencies, FLMs, tribes, and EPA regions of what the standard planning process is.

Tina provided further thoughts on what would be helpful. BART applies to the 1962-1977 period. So in the current planning process is there a year when a source would be “grandfathered” out of Regional Haze four factor analysis? For example, if the source had PSD analysis done in 1995 would this be proof that the source has adequate controls? Or would it tell the state that the source has to look again at new controls since it’s been so long?

Tom replied that it would depend on the control technology installed. BART addressed the largest sources, as a legacy of the 1977 CAA amendments. But there are still boilers and other types of technology not covered by BART. There might be sources from the 1970s that need some attention. Maybe 2010 could be a cut off year – if a source has been through PSD or Nonattainment NSR or NSPS after that, then it could be considered up to date with controls. But if the last time the source did any of those control assessment processes was, for example, 2002, then maybe that’s too long ago.

Don noted that the Draft Protocol talks about this subject. The 2016 guidance uses the term “highly effective” when talking about existing controls that make a new control analysis unnecessary. EPA did indicate though that a state would most often need to take a new look at possible controls in the next planning period, even if the source in question underwent BART or other analysis the last planning period. In that light, even control determinations made in, say, 2015 might still need another look.

Tom stated that WRAP’s goal is to document consideration of controls objectively – i.e., to lay out what considerations each state should take into account in its control analysis. That’s as far as WRAP will go because going any further means calling state permitting groups and that would be inefficient for a WRAP group. Each state will use the Q/d analysis provided by a contractor to decide on its own which sources will be subject to further analysis for controls.

Tina thought that putting specific dates in a document describing a process for revisiting earlier control assessments would be helpful. Curt agreed, noting that Colorado has a boiler that goes back to 1918 that hasn’t really been regulated at all. There are sources out there like this one, which is a good example of a source that needs to be looked at for a new control analysis at some point.

Tina said that another issue to be considered in any contractor work is the threshold for tons of emissions per year.

Curt noted that the subcommittee has been talking about whether 100 tons is good screening threshold. The proposed contract for Q/d analysis would actually screen at probably 25 tons and then states would have discretion over what Q/d threshold they want to choose. Going down to 25 does bring in a lot of NOx sources. There won’t be a lot of these smaller sources that have Q/d threshold of 10 or more. Analyzing based on a 25-ton threshold brings more transparency as far as the universe of sources being looked at, with states still able to decide on appropriate thresholds.

Tina said that 25 tons seemed extreme. It’s fine for California but what about others? Curt agreed that 25 tons is “severe.”

Elias asked whether there was a big demand from states to have a contractor do the Q/d work that Curt had described. Elias said that Arizona did its own Q/d calculations fairly quickly. Did he miss a big push on the Technical Steering Committee call, for example?

Curt replied that when he asked for Q/d related feedback on the last Control Measures subcommittee call, he only received three responses, so it seems that maybe folks haven’t done their own calculations or maybe aren’t sharing. Curt noted that there’s a desire for more transparency by states, for example from the FLMs. That desire explains some of the motivation for seeking a contractor. Getting Q/d calculations from a contractor might also prod states to get moving on sending out letters to sources asking for control cost data.

Tina asked whether the contractor would use GIS data for permitted sources.

Curt replied that, yes, the contractor’s work would be GIS-based data but will also involve a radius analysis to see how many C1As are within a certain radius of each source, for example 100 kilemeters.

Tom suggested that maybe 200 kilometers should be the radius. Although a 25-ton source won’t have much impact, the analysis does need to look at sources that may have impacts in other states beyond their own. The contract work will use the 2014 inventory that states have already commented on as the source of Q in the Q/d calculations. The contractor will then use the Draft Protocol method to do the analysis. Getting a contractor to do the analysis will assure a consistent methodology, with sorting of Q/d results from highest to lowest and results reported in a pivot table. That table will allow users to sort results in many different ways.

Curt said that the contractor work will benefit states by providing information regarding their own C1As, but it will also show impacts between states, helping states to focus especially on C1As that are near state borders. If states were to all do their own individual Q/d calculations, interstate contributions might not be addressed.

Tina said that another question to be considered is wind direction. Q/d provides results irrespective of wind, including on the poorest visibility days, so that’s a consideration states will need to be able to take into account.

Curt stated that Q/d did not account for wind, atmospheric chemistry, or transport. It’s just a quick screening method to enable states to send notices to sources that they need to provide control cost data. Curt doubted that states have current data on control costs.

Tina noted that in the first planning period, Nevada knew it had a source with visibility impacts on C1As on the clearest visibility days, but on the poorest days the wind was blowing in another direction, so there actually was no visibility impact on those days. We don’t yet have such data.

Curt followed Tina’s comment by noting that he wanted to be clear on a key point. The Q/d method and a framework for assessing controls put in place as of a certain year are intended only to provide a consistent method for identifying sources that each state will then need to make further decisions about, as far as whether to send letters to those sources requesting control cost data. Later in the planning process photochemical modeling will show more detailed information, for example back trajectories. But photochemical modeling will be most necessary to get an understanding of cumulative reductions possible due to controls across source categories. PGM will also include lots of data on fire and other complicating factors.

**4. Discussion of Dec. 12th webinar and how it informs the Draft Protocol**

See notes above.

**5. Discussion of states requesting visibility modeling**

See notes above

**6. Next Steps**

Curt repeated that he will send out an email with an updated version of the Draft Protocol document. He proposed expanding the list of email recipients beyond the subcommittee members to all WRAP states. He would like to have them weigh in on the Protocol since it will affect all of them (although probably not Alaska and Hawaii).

**Action item**: Curt will send a Doodle poll to schedule a Control Measures subcommittee call for the week of January 7. That call will review the scope of work document that Ramboll will be providing for Q/d calculations and other work discussed on this call.

The next regularly scheduled subcommittee call is already set for January 23. On that call the group will hold more discussion of the current state of the Draft Protocol.

**Decision**: Curt’s goal is to have the Protocol “fairly finalized” by the end of January, so that states can move on to notify sources of the request for detailed cost information on control measures potentially available to those sources.

Tina asked whether the subcommittee should try to get feedback on the Draft Protocol from the Regional Haze Work Group by a certain date.

**Action item**: after some further discussion, Tina agreed that she would talk more with Curt and Tom about the logistics of getting Work Group-wide feedback.

**7. Next Call Jan. 23, 2019 10-11 am mountain**