

New RCSA section 22a-174-22e Subcommittee Meeting
Testing
7/1/15
Summary of Discussion

Participants

Ray Potter, TRC
Steve Eitelman, UTC/Pratt
Chris Santucci, UTC/Pratt
Rick Soucy, GZA
Bob Silvestri, PSEG
Brian Freeman, Robinson & Cole
Shawn Konary, NRG
Bob Spooner, NRG
Jen Beaulieu, Woodard & Curran
Jack Dunne, Pfizer
Jim Romanski, Yale
Unidentified woman
Bob Girard, DEEP
Jaimeson Sinclair, DEEP
Cinda Lautenschlegar, DEEP
Merrily Gere, DEEP
Wendy Jacobs, DEEP

Jim: My comment at the last subcommittee meeting might have instigated this meeting. I was reacting to the comment that we might be backing off of addressing testing in the new Section 22e because the changes could be handled elsewhere. We've had the discussion and I agree that to handle it elsewhere might be good, but Section 22 has a lot of testing language so in practice you're relying on Section 22 to regulate other things.

Bob G: We oversee testing on all types of pollutants for many sources. I disagree that we need to broaden things.

Jim: If we don't address it now, we're just putting it off.

Bob G: Section 5 is the universal rule for testing. We can ask for a different %. 90% MRC is generally the target point. From an environmental perspective it makes the most sense. The intent of testing is to show compliance at all times with the regulations. We're looking for a consistent approach and integrity of the program. We're not looking for sources to cherry pick the "sweet spot". We have an overarching program/rule. A lot of recently issued permits refer to Section 5. In general things work smoothly and where there are problems we've made adjustments. Some facilities seem to have more problems than others.

Cinda: I made a list and I'm not seeing facilities with issues related to 90% MRC.

Jim: Just because folks here may or may not have had an issue we want to make a comment because we think it should be a certain way.

Bob G: We've had issues with your facilities (Jim, Jack, Bob S) that we've worked through. It makes sense to have a target that overall meets the needs. There are ways to provide allowances when needed. The commissioner has the authority to require testing. You know better than I do where you'll have challenges. We'd lose efficiencies if the commissioner doesn't have the authority. The 90% language is the only place that's discussed. We feel that this is the ideal starting point. I'd be interested in hearing what people have issues with.

Bob S: 90% previously was associated with load. What happens if we can't get there? Does it get codified or go back to commissioner discretion? We don't want to run the jet for a long time because it's not cost effective. What does 90% really mean?

Bob G: The current Section 22 doesn't define energy in or out. We're interested in air pollution. Heat input.

Cinda: Waste incinerators use output because the fuel varies.

Jaimeson: Biomass too. We could tailor to emission unit type or leave as is. We may not come to answers now but we would like answers.

Bob G: Energy input is desired. IC engine units are in gm/bk hp-hr. When output has been used in the past we've had issues with sources getting to 90% for that. We need to provide clarity.

Bob S: Combustion turbines are very sensitive to temperature.

Jim: If you have a turbine you got a letter from Gary Rose.

Bob S: If you have a permit you got that letter. Not if you're registered.

Jim: We're building equations to go in the permits. Not everyone agrees with the solution, but we have certainty. Your department has been stellar with handling gray area issues. We've had times when we've had to get a test done in <30 days. I think we should have something that handles every situation. There's no mention of 90% in Section 5. The testing guidance points to a federal memo that doesn't reference 90%. There's an example about a year ago for 3 diesel generators subject to RICE.

Bob G: You're outside of NOx now – they're permitted units with a multitude of regulatory drivers.

Jim: They have NOx CEMS. They're testing for the MACT. When I put the ITT in I referenced the RICE MACT. Can test at + or – 10% of 100%. For the 3 runs you present how you'll measure. When I got the ITT back I was told that heat input must be used. I was testing for the RICE MACT and thought that the federal rules should apply. Brand new Solar turbines have precise metering. Diesel generators have a circulating manifold. We're selling MW to the grid so those meters are calibrated and more accurate.

Bob G: How did the testing work out?

Jim: We got to 90% for both MW and heat input, but it was running crappy.

Bob G: That's the slop. What was the hardship?

Jim: We were crossing our fingers that it was going to make it.

Bob G: Whenever a test is performed we look at the regulatory drivers. We look at that when the ITT comes in. Were you seeking to use the test for the 5 year test cycle?

Jim: No.

Bob G: Sometimes the entity doesn't flag that.

Chris: The Middletown facility was testing for KKKK. Section 22 is 3 1 hour tests. KKKK is 20 minute tests and + or - 25%. It would save fuel, \$ and emissions if we don't have to do 3 1 hour tests.

Bob G: We believe 90% is better. It needed a permit. If there's a NSR permit that may be why you got that direction. What is the hardship? I'm not seeing it. We act on the ITT as quickly as possible. Where we need to we adjust the timeframes. We have a consistent approach and sometimes there are a multitude of drivers.

Rick: In some cases (boilers) you measure fuel, not MMBtu. In those cases it's difficult to come up with an accurate measurement. Electrical output is more accurate on many generators. Fuel meters are not accurate over a short amount of time. Based on kW or MW is more accurate at times.

Bob G: It may be easier to measure output but is it suitable for our purposes? 90% is tough then too? BTU content is uncertain with digester gas. Sometimes the issue crosses programs. Our work focuses on the upper end. We don't make you test the whole gamut. We're looking at 90% of emissions. Related to fuel combustion.

Rick: The hardship becomes do you need accurate fuel meters just to stack test?

Bob G: Yes.

Jaimeson: What method is used?

Jim: Method 19.

Jaimeson: So an f factor. Does that deal with quantity or quality?

Jim: Quality.

Jaimeson: So it's not actual heat input of the unit in time.

Jim: If measuring lb/hr you need flow.

Jaimeson: The emission rate for RACT is lb/MMBtu and gm/bk hp-hr. Heat input is only looked at for challenging emission control based on how licensed. From a RACT standpoint why are we so concerned with using output?

Bob G: At the time of the test we measure fuel flow.

Jaimeson: I heard pollution is based on fuel going in. If you calculate heat input using a fuel factor, it's not like you're determining the actual lb or heat input going into the unit.

Bob G: We do. You get the measurement, concentration. We're expecting that there's an actual measurement. We look to have the fuel accurately measured.

Cinda: There's a specific fuel analysis.

Jaimeson: For the emission test do you use a fuel factor? What about exhaust flow rate? Do you calculate or measure?

Bob G: All limits are concentration based, directly measured or gm/bk hp-hr.

Jaimeson: Is lb/MMBtu from an f factor or measured concentration?

Bob G: If you have a rate you need the flow. Regarding the question about 90% maximum heat input, there's a relationship with respect to emissions. It's really specific to the capacity of the unit. How do you most effectively measure? – typically fuel flow. We want the quantity of fuel to be accurately recorded at the time of the test. The starting point is equipment specific. Some permits state things in gph. As far as this rule is concerned, it's related to capacity.

Jim: We just tested 5 0.25 MMBtu/hr (??) hot water boilers. No permit. NOx RACT. Natural gas only. The NOx probe goes in the stack. The fuel flow we took off of the utility meter to assure 90%. All emission calculations were done off of NOx concentration. Ran at 90% off of nameplate. Used gas company meter.

Bob G: That concentration depends on what happens with the process. We need to try and assure during all periods of operation the source will comply with emission limits. We use 90% of fuel, paints, solvents. A large part of what we do is fixated on energy input and pushed for material input. I'm not sure an alternative will provide a rosier scenario. Through the guidelines we're looking at more of a lead time. Input vs. output throws a whole set of decision points. There are benefits to consistency. I agree that more clarity on MRC is needed. Are there any other issues?

Rick: MRC can change over time. Over time there is extreme difficulty reaching.

Bob G: In those instances a permit revision is made.

Rick: Some don't have permits.

Bob G: We can't make people do the insurmountable.

Rick: Why couldn't we have 90% of what could be achieved in practice instead of MRC?

Bob G: We look at the circumstance. We've allowed the test to be moved. Sometimes a unit can't achieve what it states to achieve. If it has a license and is not accurately reflecting reality we'll change it. We try to provide certainty for the source the next time it's tested. Generally we accommodate folks.

Something may look rosy initially but there could be unintended consequences. We wouldn't be looking at the same starting point.

Rick: I've looked at the NSPSs. KKKK gives more flexibility for what you can achieve in practice.

Cinda: We'd be willing to negotiate the load requirements. You have to comply with permit limits at all times. The federal rules have gross inconsistencies. We don't have the resources to assure that all these different requirements are met. We understand the challenges you face and we have the same problem.

Rick: Major federal rules have built in flexibility for MRC achieved in practice.

Jim: The 1st page of the permit with the capacities – many people don't believe those are enforceable. The emission limits are. Your installation and what comes out are not guaranteed by Caterpillar.

Bob G: Overall the permits match up well. Things decline over time. MRC is critical. Enforcement staff looks at that closely. It's important that it be accurate. Cinda did extensive research regarding KKKK and it appears to be an anomaly. We go back to our program and what is achievable. We look at the circumstances. Here's your objective – it's consistent. We don't ask people to do the unachievable. It may appear to be easier to do it another way, but when there's no consistency you get into the back and forth. We should stand by the protocol. We try to make things clear up front and if you can't do something, it should be flagged on the front end.

Bob S: Are there things brought up that need to be codified? Not everyone at this table will be here in the future.

Bob G: I think we could clarify MRC. Consistency is needed. The rule now incorporates the 4 15 minute runs. We're seeking to have MRC clarified up front. The 63 months language makes sense. We haven't fully sorted through the KKKK issue as far as MRC. We can provide clarity on a few other things. Does 90% even need to be in this rule? We rely on guidelines. Ambiguities are not good for anyone. Discretions are ID'd to date in the rule.

IC engines output?

Merrily: Are you talking about revising the guidelines?

Bob G: No. I'd like a 90 day lead time for review instead of a 30 day turnaround.

Jim: EPA gets 60 days.

Bob G: You get letters sometimes on the day of the test. That's not good for anyone.

Jim: For RATAs you don't need 90 days.

Bob G: No.

Bob S: Quarterly testing is required due to MATS.

Bob G: We've started to leverage off of guidelines in permits. We could say test in accordance with Section 5 and take 90% out of the rule. We're still looking at KKKK issues. The limits are more stringent and there is a more frequent test frequency.

Jack: The timeframe for approval is crucial, especially if it's not cold enough to reach load. In 2013 for turbine testing we did not hit 90% due to temperature and it was very stressful.

Bob G: That's one you flagged in the protocol and we didn't catch it.

Cinda: It's difficult to negotiate changes within 30 days.

Bob G: There are instances where we approved the protocol when you had flagged testing issues and that's on us. The turbine letter addressed permitted sources. For registered sources there's no solution in place right now. Most haven't had a problem to date.

Bob S: The last time we included the curve and the data.

Jaimeson: I haven't heard how the reversion to the original Section 22 language is not flexible enough for you.

Ray: I don't have an issue with the 90%, but would like to see 90% or what's safely achievable. Firewalls have been glowing on occasion due to running at high load and that needs to be taken into account. I have boiler house operators that have not agreed to testing under certain conditions and they're pushing the units. The stack group puts together the protocol, not the boiler operator.

Bob G: That should be brought forward by the source and demonstrated that a lower load is needed. That's a fair point. If there's a federal requirement embedded in the NSR permit we can look at that.

Chris: We have to do federal testing and also Section 22 testing and management doesn't understand why what's good for the feds isn't good for the state. GHG emissions can go way up when we do testing under state requirements vs. federal requirements. We can run 4-5 hours on a single fuel and that's a lot of emissions.

Ray: Could we consider source with test durations?

Bob G: We're interested in getting an accurate picture. Do you get the same picture with 3 1 hour tests that you do with 3 20 minute runs?

Chris/Ray: A lot of units just sit there at the same level.

Bob S: There's variability based on the unit you're testing.

Bob G: I'm amenable to sorting through these things but am interested in dealing with NOx RACT right now.

Shawn: Ambient temperature is a big issue. The shift from output to input is just a couple of years, right?

Bob G: We were not consistent before. We've put a lot of emphasis the last few years on consistency. Over the last 6 years we've moved to do things consistently. We've been able to find solutions. The last 4-5 years we've been pretty consistent. I'm worried that relief at the front end might not be clear. If it's less than clear, that sets things up for subjective determinations. You need an approved protocol and we don't want to get into back and forth discussions. Issues will grow. How do you get into representative operating scenarios? I'd like to avoid that.

Shawn: We appreciate the clarity before the test. I've gone through this in a lot of states and it's never been an issue. You have to have the perfect circumstances sometimes to get to the 90% number. In the future we need to think how we set the maximum heat input values for new units.

Bob G: It's important that the value be real.

Shawn: It's real, but under a certain set of circumstances.

Brian: From what I'm hearing, if there are NSR applications, those are different circumstances. Conceptually it seems like Section 22 is a very different purpose, and a fairly narrow issue.

Bob G: Emission testing is a snapshot. It's our opportunity to find out over time what's coming out of the unit. Testing once over 5 years is not very much. Operating at the upper capacity under most challenging circumstances for NOx. Circumstances deteriorate over time.

Brian: You're talking about not just NOx Section 22 compliance but permit compliance. I'm talking about compliance purposes rather than MRC for NSR purposes.

Bob G: That result can have a broad use.

Brian: That seems to complicate the issue.

Jim: I'd still like you to think about going up to + or - 10% of 100%. Then you might be able to pick a more typical value and you have a better chance of meeting 90%.

Cinda: We've not issued an NOV for that.

Jaimeson: Exceeding the design specifications is the first indication of a modification. We have to defend the NSR program.

Ray: There are a lot of sources that never operate at 90%. Many operate at 80% or less.

Jim: Parameters in permits may not specify.

Bob G: We'd have problems implementing the program without MRC. Sources can take an enforceable restriction.

Ray: Most sources don't want to do that. Some of these guys don't know when 90% is any more.

Chris: There's also support equipment with boilers.

Jim: The problem is not really the de-rating, it's the rerating if they go to a higher level in the future.

Bob G: We're looking at this equipment every 5 years. There are also repercussions from an NSR perspective.

Merrily: Is the purpose of the test to measure the worst case or typical operations? No matter how you define there will be difficulties over time. Bob is looking at the worst case. I haven't heard changes to the language are needed for Section 22e.

Bob G: Some issues we need to work through internally. The definition of MRC and KKKK sources. We might use the stack test guidelines.

Merrily: We will make revisions to the draft again based on discussions. The next subcommittee meeting is August 13 after SIPRAC. Comments on the draft previously sent to you are due July 10.