Operation and Fueling (O/F) Workgroup Meeting Notes from September 8, 2016 Teleconference

(Note: Voting Members are in bold-face)

Meeting led by **John Crouch** (HPBA, Co-Chair of O/F Workgroup), **Marc Cohen** (Massachusetts DEP, Co-Chair of O/F Workgroup), **Lisa Rector** (NESCAUM, Co-Chair of Steering Committee)

Meeting Invitees: Bob Lebens (WESTAR, Co-Chair of Steering Committee), **Rod Tinnemore** (Washington) **& Phil Swartzendruber** (Puget Sound Clean Air Agency), **Cindy Heil** (Alaska), John Wakefield (Vermont), **Lisa Herschberger** (Minnesota), Ann Jackson (Minnesota), **Randy Orr** (New York) **& John Barnes** (New York), Adam Baumgart-Getz (EPA OAQPS, Wood Heater NSPS Group Leader), Amanda Aldridge (EPA OAQPS, Wood Heater NSPS Lead), Stef Johnson (EPA OAQPS, Measurement Group Leader), Mike Toney (EPA OAQPS, Measurement Group), Bob Ferguson (Consultant to HPBA, President of Ferguson, Andors & Company), **Tom Butcher** (Brookhaven National Lab), Rebecca Trojanowski (Brookhaven National Lab), **Gregg Achman** (Hearth & Home Technologies), **Rick Curkeet** (Intertek), **Ben Myren** (Myren Labs), **John Voorhees** (US Stove), **Tom Morrissey** (Woodstock Soapstone), Dan Henry (5G3 Consulting), Mark Champion (Hearth Lab Solutions), John Steinert (Dirigo lab), Doug Town (Dirigo lab), Gaetan Piedalue (Polytests lab), Jared Sorenson (OMNI lab), Sebastian Button (OMNI lab), Kelli O'brien (ClearStak), Jeff Hallowell (Biomass Controls), Jill Mozier (EPA contractor, meeting note taker)

Primary Conclusions from Meeting:

- The O/F Workgroup members introduced themselves and the group's objectives, key issues and guidelines were briefly reviewed. The O/F Workgroup's decision making structure will be a simple majority, although the dissenting opinion and rationale will be drafted and included with the majority decision as part of the recommendations to EPA.

- The O/F Workgroup will meet again on Thursday, September 29th at noon EST, with a focus on species. The very next week (October 6th) there will be a presentation on the ASTM effort. After that, the group will meet every 2 weeks, starting October 20th – the first and third of every month – at noon EST.

- After the sessions on species and the ASTM effort, there will be a presentation on the BeReal effort in Europe. Lisa may record these educational sessions as webinars on Basecamp.

To-Do List:

- The O/F Workgroup participants (both voting and non-voting) should log-onto Basecamp and familiarize themselves with the Draft Guidelines document in particular.

- Any documents on Basecamp will be organized topically.

- Lisa Rector and Bob Ferguson will discuss how to condense and/or parse the ASTM presentation. Lisa will also determine if slides from the regulatory perspective should be added.

Highlights from Meeting:

- John Crouch introduced himself as co-chair, noting that he is the Public Affairs Director for the Hearth, Patio & Barbecue Association (HPBA), lives in Sacramento, and has been involved with residential wood heater issues for many years.

- Marc Cohen introduced himself as co-chair, noting that he is an environmental engineer and the biomass regulatory permitting lead for the Massachusetts Department of Environmental Protection, and has also been involved with residential wood heater issues for many years.

- The meeting continued with roll call and introductions:
    - Jill Mozier – EPA contractor with EC/R Inc, worked on the Residential Wood Heater NSPS with EPA since 2012, taking notes during the O/F Workgroup meetings and for the PM Measurement Workgroup and the Steering Committee. (Draft notes will be posted to Basecamp for comment and any corrections will be incorporated before finalizing.)
    - Lisa Rector – senior policy lead with NESCAUM working since 2001 on wood heater issues including test methods, research, modeling and monitoring, also the co-chair of the Steering Committee along with Bob Lebens.
    - Bob Lebens – Technical Coordinator with WESTAR, involved with wood heater issues starting in Oregon in the early 90s, also involved with revisions to NSPS, co-chair of the Steering Committee along with Lisa Rector.
    - Mark Champion – owner of Hearth Lab Solutions, involved with EPA field studies and design of wood heaters for manufacturers since 1990, including the 4 field studies in Crested Butte and product development and testing for industry.
    - Gregg Achman – Vice President of Product Engineering for Hearth & Home Technologies Inc., a prominent manufacturing company of wood heaters with over 100 patents including the brands Quadra-Fire, Harman, Heatilator, Vermont Castings, Pelpro, Monessen, Heat & Glo and others.
    - Cindy Heil – Program Manager at the Alaska Department of Environmental Conservation, responsible for area sources including wood heater emissions, involved in developing SIP for Fairbanks area which has the highest $PM_{2.5}$ design values in nation due primarily to wood smoke
    - Lisa Herschberger – Scientist at the Minnesota Pollution Control Agency working on wood stove pollution for 8 years, authors Minnesota's Residential Wood Combustion Survey Report as well as source apportionment studies, performs outreach on health effects of particles and wood smoke, now in air policy unit working on significance of residential wood combustion sector as other sector sources have decreased.
    - Ann Jackson – Senior engineer working with Lisa Herschberger in the Minnesota Pollution Control Agency, in air policy for 25 years including writing regulations for incinerators.
    - Jared Sorenson – Director of Technical Services at OMNI Test Labs, previously employed with Intertek, involved with manufacturing since 1980s and then in compliance testing in late 90s
    - John Voorhees – Director of Product Development at U.S. Stove Company since 2014 including compliance, previously in product testing for 15 years including with Intertek

- John Barnes – Chief of the Stationary Source Planning Section in the New York State Department of Environmental Conservation, working on residential wood combustion issues since 2007, assisted NESCAUM with their model rule that became a NY State regulation in 2010
- John Steinert – President of Dirigo Labs since 2010, previously with OMNI since 2007
- John Wakefield – Compliance Section Chief at Vermont Department of Environmental Conservation for past 3 years, responsibilities range from stationary sources to residential wood combustion, completed an outdoor wood boiler change-out program and also designed a woodstove change-out program, here to learn as an observer not as a voting member
- Stef Johnson – Group leader of the Measurement Technology Group at EPA in RTP, NC (a.k.a. Mike Toney's boss), responsible for developing, maintaining, updating and approving EPA test methods, including those applicable to residential wood heaters
- Randy Orr – With the New York State Department of Environmental Conservation's Bureau of Quality Assurance for Stack Testing for last 9 years, performed stationary source permitting prior, responsible for ensuring EPA's (Stef Johnson's) methods are implemented properly
- Rick Curkeet – Chief engineer with Intertek, testing and certifying wood stoves since 1979, also ASTM E06.54 (Solid Fuel Burning Appliances) Subcommittee Chairman since 1986 which includes ASTM standards for wood heaters referenced in NSPS
- Bob Ferguson – President of Ferguson, Andors & Company, consultant servicing the hearth industry since 1980, previously director of R&D at Vermont Castings, previously served on board of HPBA, member of ASTM including chairing or acting as facilitator for ASTM test methods applicable to wood heaters
- Sebastian Button – Safety Testing Manager at OMNI Test Labs, in charge of wood emissions testing for 8 years
- Rod Tinnemore – Environmental Specialist with Washington State Department of Ecology, involved in regulations and air quality related to solid fuel burning
- Tom Morrissey – President of Woodstock Soapstone in New Hampshire, has been designing and manufacturing woodstoves for 39 years, advocate for tighter more science-oriented test methods
- Rebecca Trojanowski – Staff engineer at Brookhaven National Lab supporting test method development for woodstoves and boilers
- Tom Butcher – Research engineer at Brookhaven National Lab, engineer for nearly 40 years, involved with wood heater research and testing since 2010, working on technical aspects for test method development
- Amanda Aldridge – Engineer at EPA, involved in wood heater issues since being EPA lead for the hydronic heater voluntary program, currently EPA lead for Residential Wood Heater NSPS (since Gil Wood retired)
- Kelli O'brien – Lab manager at ClearStak in Connecticut, has worked with NESCAUM and Brookhaven in testing woodstoves and hydronic heaters, also managed sanitation project involving combined heat, biochar, and power system funded by the Bill and Melinda Gates Foundation

- Gaetan Piedalue – Test engineer in EPA-accredited test labs for last 25 years, first with Intertek and now with Polytests Lab (Canada)
- Dan Henry – Co-founder of Quadra-Fire, previously chief technical officer for Hearth & Home Technologies, involved in wood heater designs since 1979, holds several patents for second combustion stoves, certified dozens of models, now retired and consultant to industry
- Doug Town – Quality Assurance manager with Dirigo Labs, 25 years' experience with air testing including source, ambient and indoor air testing, 6 years' experience in residential wood combustion including with OMNI and Dirigo Labs
- Mike Toney – Part of EPA's Measurement Technology Group in RTP, NC involved with developing, maintaining, updating and approving EPA test methods, including those applicable to residential wood heaters, many years' experience with residential wood heater testing under EPA's NSPS
- Note – Other invitees may have been on call, who did not introduce themselves.

- John Crouch concluded introductions by noting that the O/F Workgroup is large and diverse.

- Lisa Rector and NESCAUM use the on-line tool Basecamp, which Lisa introduced the group to with some basic instructions. Basecamp is a web-based method to organize projects with a central repository for everything: files, to-do list, calendars, and discussions. Lisa noted that everyone in the group had an e-mail invitation to Basecamp. [Note: anyone who didn't receive an invitation should e-mail Lisa to ensure access.] Lisa noted that she, John Crouch, and Marc Cohen had already been using the O/F Workgroup's Basecamp. Lisa proceeded to go through each of the tools on Basecamp:
  - The "Docs & Files" include agendas, meeting notes, general docs, data, and recommendations. Any group member can upload a document to Basecamp. Lisa opened the Guidelines document (under "General Docs") and demonstrated the options to share, make list, etc.
  - The "Automatic Check-ins" is a way to update the team.
  - The "Schedule" is for upcoming meeting dates and times.
  - The "To-dos" sends out e-mails as reminders and then these items can be archived once completed.
  - The "Message Board" can be used for discussions.
  - The "Campfire" is for general dialogues, not necessarily topical.

- Lisa noted that pertinent documents from Basecamps for the Steering Committee and the PM Measurement Workgroup would be posted to the O/F Workgroup Basecamp as well. John urged the group to begin working with Basecamp, noting that it becomes logical/intuitive with use.

- Lisa gave an overview of the cordwood test method (CTM) process, also referred to as the Federal Reference Method (FRM) process, of which the O/F Workgroup is an integral first step. Lisa noted that the process was outlined in EPA's March 2016 Discussion Paper entitled "Process for Developing Improved Cordwood Test Methods for Wood Heaters" (available at https://www.epa.gov/sites/production/files/2016-03/documents/discussion_paper_-_process_for_dev_imp_cwtm_030916.pdf). This process consists of a Steering Committee and

two workgroups: the PM Measurement Workgroup and this O/F Workgroup. The ultimate goal is to prepare a CTM. As part of the process, ASTM 2515 plus Method 5 will be reviewed and recommendations for improvement made to EPA. The Steering Committee is providing direction so that the CTM addresses regulatory needs in terms of PM measurement and operational/ fueling aspects while also ensuring the CTM is feasible to implement by industry.

- The Steering Committee developed the framework for the two Workgroups. Lisa noted that the O/F workgroup process is not intended to be contentious, although consensus may not always be achieved. Because consensus will not always be possible, dissenting opinions will be presented (along with the majority decision) so that EPA can understand these opinions and viewpoints. John Crouch and Marc Cohen are chairing the O/F Workgroup and George Allen is chairing the PM Measurement Workgroup. Lisa noted that EPA is sitting in, not as voting members, but in an advisory role [regarding regulatory process needs]. Lisa noted that the following people were members of the Steering Committee: Lisa Rector (NESCAUM), Bob Lebens (WESTAR), Jack Goldman and John Crouch (HPBA), Phil Swartzendruber and Rod Tinnemore (Washington State), John Barnes (New York), Cindy Heil (Alaska), Marc Cohen (Massachusetts), Lisa Herschberger (Minnesota), and Bob Ferguson (Consultant to HPBA). There were no further questions regarding the Steering Committee.

- Lisa discussed the **Objectives for the O/F Workgroup**, which are outlined in the Guidelines document (under "Docs & Files" on Basecamp) –
    - Develop a cord wood certification fueling/operational protocol that more closely aligns in-use emissions performance with lab certification tests
    - Develop a method that measures emissions over a variety of burn rates and conditions
        - Operating range of appliance
        - Fuel quality
    - Quantify and improve operational stability and thereby improve the precision and accuracy of final PM measurement.
    - Increase or develop correlations between lab tests and field performance
    - Identify elements of testing specified in the protocol and those determined by operating instructions
    - Structure test method to assess daily performance and annual performance emission rates

- Lisa noted, regarding quantifying and improving operational stability and thereby improving the precision and accuracy of the final PM measurement, that real-world alignment may decrease precision. Therefore, it's a balancing act.

- Regarding recommendation considerations, Lisa noted that the O/F Workgroup has a long list of issues to consider (as listed in Draft Guidelines document). The Steering Committee would like the O/F Workgroup to address or characterize the potential impacts of any recommendation using 4 criteria:
    - How does the change (e.g., moving to cordwood) impact the result?
    - How does the change impact cost of test?

- How does the change impact the ease of the test?
- How does the change correlate to existing emission data set?

- Lisa reviewed the Key Issues the O/F Workgroup would need to consider. Regarding the first - Fuel Species – Lisa noted that the issues of species will be a constraining factor because state regulations restrict the movement of cordwood to within 50 miles. Therefore, the process will need to ensure labs have access to cordwood, so as not to create competitive advantages. Lisa briefly noted the following **Key Issues** from the Draft Guidelines document:

  Fuel

  Species
  - *Address need for capacity/flexibility to conduct the testing worldwide*
  - *Quantify differences of using different species for certification testing?*

  Address impact of moving from a single species fuel to a multiple species/density fuel. Possible configurations include:
  - *Single species*
  - *Mixed load*
  - *Test with multiple fuels, e.g. run 1 hardwood & run 2 softwood*

  Fuel characteristics
  - *Fuel moisture range*
  - *Fuel density*
  - *Fuel piece sizing – length, diameter, etc.*
  - *Requirements for bark, knots, etc.*

  Fueling Protocols

  Fuel load weight and configuration
  - *How much fuel*
  - *Fuel charge placement - benefits of standard versus random*
  - *Loading protocols – specified in the method, how scripted can manufacturer loading protocols be?*

  Testing Parameters

  Test 'cycle'
  - *What are the key operational elements that the method should capture?*
  - *Startup, steady state, idling, shutdown, others?*

  What should a test cycle look like?
  - *hot-to-hot, cold-to-hot, operational profile (scripted operation)*

  What is the duration of the test cycle?
  - *burn to zero, burn until emissions end or something else*

  Should test runs have consistent definition of end and what should that definition be (e.g., when 90% of fuel is consumed in order to eliminate charcoal tail and minimize duration)?
  How many test runs?
  Operating range (for efficiency)? Precision concerns may necessitate multiple runs

Device Operation
Adjustments during test cycle
Appliance adjustments – can modifications to the appliance settings be made during the test?
Coal bed parameters
Fuel charge adjustments

Method Precision
Need for replicate testing
Appliance Operation - Specified procedures for air controls, etc.
What are the allowances for manufacturer's instructions?
What stack height (and draft) should be specified or allowed during testing?

Other measurements
Efficiency - ensure that method provides realistic efficiency values for consumers
What other emissions should be measured: CO, NOx, VOC, PAH?

- Lisa further noted that the O/F Workgroup should develop a research agenda reflecting what data exists already versus what data is still needed. The Workgroup should develop specific recommendation for additional research.

- Lisa noted that the O/F Workgroup would employ a decision making structure based on a simple majority vote, although the group would strive for consensus. There are voting participants and non-voting participants. Voting members have the capacity to be briefed before voting occurs. For the minority (dissenting) opinion, a leader will be chosen to draft the minority position and that minority position will be included in the recommendation to EPA.

- The O/F Workgroup can request input from the Steering Committee, but that request should come with options and recommendations. In addition, the Workgroup's recommendations will be presented to a larger group of stakeholders including labs, manufacturers, environmental groups and advocacy groups.

- Regarding the timeline, Lisa noted that the Workgroup is already starting a bit behind schedule. The following is the draft timeline, although both the regulators and HPBA would love to shorten the timeline by speeding up the process –

  Summer 2016:
  - Develop and present recommendations on process and stakeholder outreach
  - Prioritize issues

  Fall 2016
  - Develop initial data needs
  - Identify key ranking criteria

  2017
  - Review data on existing and proposed test methods
  - Discuss and draft recommendations

Early 2018
- Draft recommendations completed

Summer 2018
- Present recommendations to Steering Committee and EPA

- John Crouch noted that the ASTM process took 4 years and 2 years were spent on the cold start alone. John explained that some of the issues/bullets feed back into other issues in ways which interrupt the forward motion of the process, requiring taking a step back. John concluded that he assumes this will be a 4-year process, that he's committed for that timeframe and he hopes other members are as well.

- Marc Cohen noted that the goal is 2018 because it's two years before the 2020 NSPS standards come into place. Lisa further noted that the ASTM group did a lot of work already which means the O/F Workgroup is not starting from scratch. This workgroup can build off the ASTM work and can also use the European BeReal work as well as the Australian method as starting points for discussion. Nonetheless, Lisa recognized it was an aggressive timeline.

- John Crouch asked Gregg Achman to speak as a representative of manufacturers regarding how 2020 impacts planning now. Gregg noted that his company is already needing to plan this year for 2020 – including the number of units to be tested and getting engineers lined up. With 20 to 30 different models with different k values [meaning each requires certification], his company needs to be in the test lab every quarter from now until 2020 just to get models certified with crib. Gregg further noted that, closer to 2020, his company will attempt to certify with cordwood, but that will depend on the time and resources required to go from the 4.5 g/hr (2015 standard) to the 2 g/hr (2020 standard) in R&D, then testing and finally certification. Gregg reiterated that work for 2020 is beginning now in 2016.

- Marc requested that everyone in the O/F Workgroup review the Draft Guidelines document on Basecamp, as it's detailed and will focus group members on what needs to be accomplished. Marc further noted that NESCAUM took the lead in developing the model rule for outdoor hydronic heaters/boilers and decided to move ahead with regulations for the northeast. This process has evolved into EPA's current NSPS. So as this group moves forward from dimensional crib wood to cordwood, to better reflect in-home use, there exists a good baseline of people involved from both the regulatory side and from industry. Marc concluded that this is a group that can and should be effective in moving this process forward.

- Dan Henry noted that a very problematic issue the ASTM had in developing its CTM is the ridiculousness of applying the low burn rate requirements for crib wood to cordwood. The Australian and European approaches don't employ such low burn rates and their test methods are much simpler – that is, if it burns clean you pass, if not you fail. Dan noted that the minimum burn rate categories are a severe handicap to clean burning. A method is needed that allows a stove to be turned down reasonably and that ties the stove to in-home use based on climate zone. That would accelerate and enhance this process dramatically, would be positive all round

and would reduce the impact of species. Dan recommended that the group start looking at limiting such burn rate requirements and stop measuring at such ridiculously low rates.

- Lisa Rector noted that they were looking at a method that based burn categories on stove controls. This would not be the typical EN (European) method, but rather an operational protocol that involves multiple fuel loads. The method would not be based on burn rates per se, but rather based on air settings – an operationally-based method tied to the appliance, rather than based on fixed numbers (for burn rates). That's being looked into, but such a method would need to be tied back to the NSPS in some way so that EPA can determine compliance with the standard. Currently there are 4 burn categories and we need to supply information to EPA that helps with correlation to the standard, even if such a method doesn't necessarily stick to burn rates. For example, giving EPA a division by 10 correlation would help. The challenge is how to move to better performance but do so in a way that EPA can use the results from the method.

- Stef Johnson noted that EPA, when developing the CTM, will go through proposal, public review and finalization of the method. The recommendations that Lisa's mentioned, that this O/F Workgroup will prepare, will hopefully streamline the comments and response so that only relatively minor tweaks are required to the proposed CTM before it becomes the final CTM/FRM.

- Bob Lebens expressed appreciation for the industry folks who have labored long and hard on the ASTM process, noting his appreciation for their willingness to participate in a process that some may see as duplicative. However, he is hopeful that much of the ASTM method/discoveries can be used to make recommendations. Bob also noted that the Workgroup reaching consensus to the greatest degree possible will make EPA's job easier.

- Rod Tinnemore noted that the regulators realize this isn't a slam dunk process, that there are a whole lot of details here. Rod noted that the process will move as fast as it can. He shares some skepticism regarding timeline but is not certain, since there are things in place already. Rod noted he wished this process began a decade ago. He concluded that at least the issues are well outlined and thorough, allowing the group to know what needs to be tackled.

- Cindy Heil noted that she hoped people would think outside the box. She knows of the effort put in the ASTM method and also knows there's familiarity and comfort there. However, what is needed now is innovation and unique thinking, because there will be no changes in engineering and design unless the group thinks outside the box. Cindy noted that she sees what's on the ground and deals with health issues and people. Monitoring has shown spikes in the morning and night. Huge amounts of material being put out into the atmosphere, even from supposedly clean, certified stoves, because people don't follow manufacturer's recommendations. So the group needs to think about that, and using lots of different species. This problem doesn't fit into a nice box, it's haphazard and messy. Cindy noted that she's in the trenches and industry is in the trenches in a different way. The bottom line is there are health issues and we have to have wood stoves in Alaska. Woodstoves can't be banned in Alaska because the supplemental heat is

needed. Cindy implored the group to be patient but to think in new ways. The ASTM method is a bridge but Cindy noted she thinks there's a different approach the group can take.

- Bob Ferguson noted that the good news is that everyone has the same objective. It has been recognized over the years, since the Oregon days, that using crib is not helpful for translating stove designs into in-home use. So everyone recognizes the test method should reflect in-home use. But, like Cindy said, people will do whatever they want. We have uncontrolled fuel and uncontrolled operators. So we do the best we can to educate people to operate well. Bob noted that there is a common objective and as someone working on the ASTM method for many years, Bob explained that the ASTM developers never looked at the ASTM method as being the end of the process. The ASTM method is considered a stepping stone. We tried to develop a test method that passed the reasonable test, so that manufacturers will use it and generate data. Data is absent from this. People need to go out and burn wood so we can understand how to improve the test method based on data. Bob concluded that the ASTM developers always considered the method an interim step to generate data, never as an endpoint.

- John Crouch noted that it was important to prioritize steps in this process and wondered whether a session based on the Be Real method should be next. Or a more foundational session on the crib method, or ASTM method, or should the first session be on fuel/species? (John noted that the question of fuel/species held up the ASTM process for a long time and also noted that the ASTM process determined there is no fuel that can be used everywhere.) John noted that there are lots of things the group could discuss next, but those sessions should be teed up now. John asked what the states' top 3 priorities are for this process.

- Marc noted that it would be really educational to get presentation from the BeReal effort. The states' interest is to get a test method that is more representative of what's actually going on in the home. The test method should reflect emissions from operating the stove similar to how a homeowner operates it, including different wood species and moisture contents. The goal should be to reduce the number of variables and yet have this test method reflect what's going on in the real world.

- John Barnes noted that it's been mentioned that the ASTM process spent a long time on species and wondered if the ASTM findings could be condensed, in order to bring the rest of the group up to speed. John Crouch replied that yes, there could be an hour or hour-and-a-half presentation on the species issue.

- Lisa Herschberger noted that it'd be valuable to have presentations that bring people up to speed on what is known and what we can agree on to help prioritization. For example, knowing what was done on the ASTM process might help capture where agreement is, rather than first going through the Draft Guideline's list. It would be helpful to first have the information to understand why we are working on one aspect or another, before prioritizing (the items on the Guideline's list).

- Bob Ferguson replied that industry and ASTM representatives did give a presentation back in February to EPA and a few others (including NESCAUM) that tried to provide a history of the ASTM process, including the rationale behind number of decision points. It's a very long presentation, but Bob may be able to distill it down. Bob noted that there is a handout, but he's not sure how it reads without some guidance. Bob offered to give that presentation, although no one (including himself) will want to go through the full 80 slides. That presentation does exist, however.

- Lisa Rector agreed it was a long presentation that took a full day. She noted that she and Bob could perhaps parse it into several meetings. Lisa also noted that there may be regulatory-side information to add, but the ASTM presentation may be a good way to jump start the preparation. Bob Ferguson agreed to help Lisa and to also go through the presentation and update it based on last 6 or 7 months, since evolution has happened in the draft method.

- John Crouch noted that, like Marc, he also wanted to see a presentation on the BeReal effort. First, however, perhaps the ASTM presentations should be given in 2 or 3 meetings. Bob Ferguson agreed that both presentations are needed and he would also like to know about the BeReal effort. Lisa noted that Christof Schmidl can give the presentation but it will be impossible to get Cindy in on that presentation, give then time difference between Europe and Alaska. Cindy noted not to worry about her. Lisa explained that it took Christof about 2 hours to go through the presentation and they have data too.

- Lisa suggested going through ASTM process first and also setting up something with BeReal. Lisa noted that she wouldn't want to bore the labs and manufacturers, but if the states and locals need to go over any foundational issues or the ASTM process, that could be set up on a separate call. Bob Ferguson suggested that he and Lisa discuss this further, although he's unavailable until the 19th. Bob will look into trimming the presentation and will then speak separately with Lisa about it.

- Tom Butcher noted that there would be great value in a session on just species, that perhaps one slice of Bob's presentation could address species. Cindy and Lisa Herschberger agreed.

- John Crouch suggested that (since ASTM can't be teed up in two weeks) the presentations start with a species focus in 2 weeks, then 2 weeks later a presentation on the ASTM effort (i.e., current cordwood method that's on ballot), and finally 2 weeks after that a presentation on the BeReal effort. Marc agreed this was a great plan. Lisa added that she could record them as webinars on Basecamp. John Crouch also suggested organizing the documents on Basecamp so it's not just a pile of documents.

- There was general agreement that the group would meet every 2 weeks. Due to Marc's and John's travel plans, the O/F Workgroup would meet in 3 weeks on Thursday, September 29th at noon EST, with a focus on species. Then the group will meet the first and third Thursdays of every month. (Therefore, there's a meeting in 3 weeks and again in 4 weeks, but then every 2 weeks after that.) **Meeting adjourned**.