

AIR POLLUTION CONTROL COMMISSION

MINUTES

JULY 21, 2020 6:00 PM

A regular meeting of the Air Pollution Control Commission was held via Zoom from the Juanita Helms Administration Center, 907 Terminal Street, Fairbanks, Alaska. The meeting was called to order at 6:00 p.m. by Kathleen Hook, Chair.

A. ROLL CALL

MEMBERS PRESENT: Lawrence Duffy, Michael Pollen, Maegan Weltzin, Thomas Douglas, Dan Givens, Catherine Cahill and Kathleen Hook

MEMBERS EXCUSED: None

OTHERS PRESENT: Cindy Heil, Nick Czarnecki, Todd Thompson and Laura Melotte

B. MESSAGES

1. Citizens Comments

None

2. Disclosure and Statement of Conflict

None

C. APPROVAL OF AGENDA AND CONSENT AGENDA

Approval of Consent Agenda passes all routine items indicated by asterisk (*) on agenda. Consent Agenda items are not considered separately unless any Air Pollution Control Commission member or citizen so requests. In the event of such request, the item is returned to the general agenda.

D. *MINUTES

*November 27, 2018

MOTION: Moved by **Commissioner Cahill** seconded by **Commissioner Pollen** that the Agenda and Consent Agenda be approved.

Commissioner Duffy commented regarding a minor typographical edit to the agenda. This will be corrected in the minutes.

VOTE: All were in favor. No objections

MEETING AGENDA AND CONSENT APPROVED WITHOUT OBJECTION

E. UNFINISHED BUSINESS

None

F. NEW BUSINESS

The Commission took a 10 minute pause to correct technical issues.

1. Evaluation of Retrofit Control Devices (RCD) for residential wood heaters. RCD's evaluated include Electrostatic Precipitators (ESP's) and catalyst.
 - a. Staff report including background, results of laboratory testing and project budget. Collaborative staff report with Alaska Department of Environmental Conservation (ADEC) and Fairbanks North Star Borough (FNSB) staff.

Nick Czarnecki addressed the Commission and stated that this is a joint presentation with the Alaska Department of Environmental Conservation and that Cindy Heil will be presenting along with him.

Mr. Czarnecki presented his staff report and slide presentation to the commission with regard to this topic.

Cindy Heil, ADEC, addressed the commission and briefed the commission on the work that she has done with regard to this agenda item. She stated that she will have additional information to add later in the presentation.

Mr. Czarnecki opened the presentation up to the commission for questions on the protocol portion of his presentation.

Commissioner Pollen queried if the "X" axis in the graph was the number of minutes elapsed. **Mr. Czarnecki** responded affirmatively that the "X" axis is the time elapsed.

Commissioner Pollen queried where the tests were conducted at. **Mr. Czarnecki** responded that the test location is at Clear Stack and they are located in Putnam, Connecticut. **Ms. Heil** added that the lab that Mr. Czarnecki visited is an EPA certified lab and they are very familiar with all of the requirements.

Mr. Czarnecki continued with his presentation and paused for questions regarding the stove cat.

Mr. Givens queried what the temperatures were on the catalyst. **Mr. Czarnecki** responded that the temperatures coming out of the stove were about 500 degrees Fahrenheit and the temperature existing the catalyst was about 400 degrees Fahrenheit.

Mr. Czarnecki continued with his presentation then paused for questions regarding the results of the ESP testing that was completed.

Commissioner Pollen requested that Mr. Czarnecki expand on the arcing events. **Mr. Czarnecki** stated that they are not certain of the cause of the arcing. He suggested this question be posed to the manufacturer later in the meeting.

Chair Hook queried where people typically operate their ESP's. **Mr. Czarnecki** responded that they don't really have good data on what the operating practices of a pellet stove are. He added that it would be very beneficial for them to be able to get more data so that they could further refine the numbers.

Cindy Heil addressed the commission again with regard to DEC testing that was performed. She made herself available for questions from the commission with regard to the non-cat cord wood testing results.

Commissioner Pollen questioned if the device worked so well that it failed. **Ms. Heil** replied that it is hard to say but that it appears to work to remove particulates and that it may not be able to handle the size of that particular device of a non-cat stove.

Further discussion ensued with regard to the testing and cleaning issues that were discovered.

Mayor Ward queried what the moisture content of the woods utilized in testing was and the species of wood as well. Mr. Czarnecki responded that the wood was Silver Maple at 19% – 21% moisture in the cordwood appliance.

Commissioner Givens queried if during testing, were any particles observed being emitted outside of the stack. **Mr. Czarnecki** responded that "re-entrainment" did occur. He further expanded on how this re-entrainment was monitored.

Commissioner Weltzin queried if the borough testing the borough took pictures of the ESP's for comparison to what DEC saw. **Mr. Czarnecki** responded that they did not look at the ESP between runs specifically because we did not want to disturb the desolator build up and knock it off. They wanted to do the six replicates with the continuous build-up. They did look at it after the 105 hours.

Ms. Heil addressed the commission again with regard to DEC testing that was performed. She made herself available for questions from the commission with regard to the catalyst cord wood testing results.

Mr. Czarnecki addressed the commission with regard to the remaining budget for testing and some of those who contributed significantly. He further commented that currently their remaining budget is approximately \$315,000.

Mr. Czarnecki continued that the scope of the project has changed sufficiently enough that in order to continue testing, they are going to need to go in front of the Assembly to

re appropriate funds, thus the primary goal of this APCC meeting is to provide a recommendation on whether to proceed with testing and if so, how it will be done.

Mr. Czarnecki explained the various recommendations. He stated that as for the Boroughs recommendations for pellet appliance testing for the stove cat retrofit, the test results did not show emission benefit and so staff does not recommend any additional testing to complete the replica.

For the ESP on the pellet appliance, the testing results do show an emission benefit and the testing is complete. No further testing is recommended.

The Burroughs recommendations for catalytic cordwood appliance testing for the stove cat retrofit on the catalytic cordwood appliance found no testing has been completed. Second catalyst would most likely lack the temperature, oxygen and fuel required to sustain a catalytic reaction and the staff does not recommend pursuing testing with two catalysts in series.

For an ESP on catalytic cordwood appliances, the testing did show limited benefit, but due to the emission spike in delay in start-up, the ESP didn't really control a lot of the emissions coming out of the catalytic cordwood appliance, so staff at this time does not recommend pursuing testing of an ESP on a catalytic cordwood appliance.

The Burroughs recommendation on the non-catalytic cordwood appliance for the stove cat and as no testing has been conducted, staff does not recommend pursuing testing on this device because right now testing is technically difficult and resource intensive and staff doesn't want to dilute the resources. It is their belief that it would be more beneficial to focus on the device with more potential. So for the ESP non-catalytic cordwood appliance staff does recommend additional testing, but only after safety concerns with creosote build-up have been rectified because the testing results do show a potential emission benefit.

Finally for the _____, the two handheld _____, they have not begun development of the protocol or lab verification in the testing program. These units could be useful for looking at any field studies in Fairbanks and there could be potential other uses that don't even include retrofits such as if we had a voluntary effort to look at what the emission profiles are locally and staff really sees value and recommends proceeding with the development of the protocols, the quality assurance program and the lab verifications of these units in anticipation of the future use.

Mr. Czarnecki opened the floor for APCC questions to staff.

Commissioner Pollen commented that the only recommendation is to continue testing the ESP on non-catalytic cordwood devices. He queried why the commission is still supporting the use of non-catalytic cordwood devices in the non-attainment area.

Mr. Czarnecki responded that this exceeds the scope of what is being discussed. He stated that that is within the regulatory structure of the CIP. The State, through the SIP has implemented regulations that address what types of appliances can be installed in the Borough. Ms. Heil expanded on this and stated that in the proposal, they proposed

to treat non-catalytic devices differently than the others. Public comments strongly disagreed with that approach, and they wanted us to treat all types of devices the same. People wanted to have the variety and the opportunity to make choices of the different types of devices out there, so that's what they ended up with in this area.

Commissioner Pollen queried if there are any non-catalytic cordwood devices that are EPA approved. **Ms. Heil** responded affirmatively and there are stringent tests that must be done and result requirements that must be met for the devices to be sold in Fairbanks.

Further discussion ensued with regard to the testing methods.

Commissioner Weltzin queried what makes testing the stove cat on non-catalytic cordwood appliances technically difficult. **Mr. Czarnecki** responded that the testing itself is inherently difficult to do particulate laboratory testing. Some of the difficulties that they ran into with the stove cat are that they couldn't do simultaneous testing because the stove cat has to be placed so close to the exit of the stove which means that they can't get the best numbers out of it and then also with the non-catalytic cordwood appliance the emission levels that they were seeing were quite high so they had troubles with the diluters. That is why the State testing went to the dilution tunnel testing.

Additionally, with the stove cat catalyst, they also have concerns with the design of the unit and in speaking with some industry experts, the catalyst manufacturers, the particular design is prone to plugging and there's also no bypass on this unit, so the emissions can just flow around the catalyst. There could be a pretty big potential for not seeing any significant emission reductions.

There was no further discussion on this item.

- b. Report on community pilot project to install ESP's in the North Pole area. Report provided by Golden Valley Electric Association (GVEA).

Ehren Schachle, GVEA, addressed the commission and gave an update with regard to this agenda item. He stated that with the potential increase regulation due to poor air quality, GVEA has been very proactive in pursuing community based solutions that benefit our members while improving air quality. In 2019, while acting as part of the Clean Air Action Committee, GVEA was approached by a group that strongly advocated the use of ESP's and they asked if GVEA would consider providing funding for a test project. After hearing the proposal and some initial results, GVEA agreed to fund the project using unclaimed capital credits and not operating revenues from the previous year. The purchase and installation of the ESP's did not impact electric rates.

Mr. Schachle continued that in October 2019, GVEA purchased 50 of the ESPs to be installed near the air quality monitor on Hurst Rd that had been picking up some of the highest concentrations of PM 2.5 particulate pollution. In November and December of 2019, seventeen of these units were installed within the targeted area. At GVEA's request, Alaska Chimney Sweep recently performed an end of the season inspection on

each 17 ESP's installed as part of the ESP test project. The inspection process included reviewing the condition of each ESP and performing a chimney sweep and cleaning.

Mr. Schachle continued that what ACS observed during their inspections was that nearly half of all ESP units failed the inspection because of extreme creosote buildup. Further ACS was unable to definitively determine whether the creosote buildup was directly related to burning poor quality, high moisture wood or due to the characteristics of the wood stoves that were being used. Based on ACS's observations recommendations and the concern of a potential biohazard, GVEA requested that ACS disconnect and remove all seventeen ESP units. From GVEA's perspective, they felt that the safety concerns associated with the continued operations of the ESP's was too high. At this time, GVEA has pulled back its funding for this project on a go forward basis and is offered to donate the remaining units to Smoke Busters the local operating group to do with as they see fit. GVEA will continue to work with the borough and others in the community to advance activities and proposals that can achieve measurable and substantive improvements to local air quality. **Mr. Schachle** made himself available for questions from the APCC.

Commissioner Cahill queried with regard to the creosote analysis, how long they were out before GVEA started seeing creosote effects. **Mr. Schachle** stated that they were installed in November and December and were most likely in heavy use for 3-4 months over the winter before being re-inspected again.

Commissioner Cahill queried if GVEA has any concern about providing the ESP's to Smoke Busters for use in the community. **Mr. Schachle** responded that part of the problem is the variables that need to be considered, ie moisture content and how is the stove being utilized on a daily basis. He stated that it is hard for GVEA to put itself in a risk position with something that is outside of their control. GVEA felt that it was best to back off until there was a better understanding of these devices and how they functioned in the field.

Commissioner Pollen questioned if the devices that had the creosote buildup versus the ones that didn't, was there any close look at whether those were catalytic versus non-catalytic to try to do a correlation with what DEC discovered. **Mr. Schachle** responded he would have to go back and look at through those inspection reports and try to correlate them against what information we had on the stoves from the outset.

Mayor Ward inquired if the of the devices that were installed, were they all cordwood devices or were there pellet devices as well. **Mr. Schachle** responded that to his knowledge they were all cordwood devices. He offered to go back and research this further.

Mayor Ward stated that he would be interested to see again if the correlation that the Borough saw with the testing that they did matches with the field work that that was done in regards to pellet stoves to versus cordwood devices.

Chair Hook commented that she appreciates what GVEA has done for the community and helping us to better understand what these are doing in real life.

- c. ESP manufacturer response to laboratory testing report and report on community pilot project. Response provided by OekoSolve.

Tom Walter, One World Resource Management, addressed the APCC. He gave a brief presentation to the commission with regard to this agenda item.

He disclosed the relationship between One World Resource Management and OekoSolve. He stated that One World Resource Management is a US corporation and that they have the marketing and sales rights to the OekoSolve product line of which the eco tubes which were tested in North Pole.

Mr. Walter spoke to OekoSolve and the products that they continue to develop. He stated that the goals of One World Resource Management and OekoSolve are to promote and provide good air quality through the precipitation of particulate matter in regions adversely affected by particulate emissions from solid fuel burning devices, the Fairbanks North Star Borough in North Pole being one of them.

Mr. Walter went on to speak to the operating principles of the eco tube.

Mr. Walter addressed the reports that were put together by Claire Stack on behalf of the Borough and the State of Alaska. He stated that in those reports, there were three primary concerns; 1) the efficiency of the electrostatic precipitators and; 2) creosote that comes from smoke that results from incomplete or inefficient burning and 3) chimney cooling. **Mr. Walter** expanded on these concerns in further detail.

Commissioner Givens commented that with regard to the testing that was done once the units ran from November to March, he feel that not cleaning them during this time was the problem. **Mr. Walter** concurred.

Commissioner Pollen commented that he feels that there is a lot of merit in taking a look at particle size distribution and that was something that was not able to be done in these studies.

- d. Commission discussion and recommendations to FNSB Mayor regarding if/how to proceed with the FNSB testing program.

Chair Hook spoke to the need for this commission to make a recommendation on how the Borough testing program needs to move forward.

Commissioner Duffy addressed the commission stated that he would be in support of a recommendation and stated that he thought the presentation was informative relative to the conditions in Fairbanks, Alaska.

Commissioner Cahill addressed the commission in support of the work that has been done and she encouraged continuing developing protocols and such necessary for the testing so that as technologies are developing we have the procedures and the policies to do the testing. She further commented that at this time she would not recommend putting an ESP on a house given the house fire issue. She further commented that the fact that GVEA saw so many stoves with the same behavior is disturbing to her.

In conclusion, **Commissioner Cahill** commented that she thinks the borough recommendations in terms of the pellet stoves and everything else are appropriate.

Commissioner Pollen concurred with Commissioner Cahill. He added that he thinks that refining the testing protocols is very important. He suggested working with manufacturers to better meet the conditions of our climate to combat the creosote buildup issue or at least a better way to maintain the stack temperatures.

Commissioner Pollen queried if the testing of devices is just basically total mass gravimetric. **Mr. Czarnecki** responded affirmatively.

In conclusion, Commissioner Pollen stated that he would support continuation of the testing program but suggested that borough staff work with the manufacturers and the other testing entities to come up with a good program.

Chair Hook stated that she is in concurrence with Commissioner Cahill. She further commented that we need to be very careful putting devices in homes that could create chimney fires. Additionally, she added that there is no doubt that the borough saw a reduction in particulate matter and we need to have the protocols in place to be evaluating that as we move into the next generation.

Commissioner Weltzin stated that she concurs with the comments made so far and is in favor of trying this new type of ESP as she feels it has great potential.

MOTION: A motion by **Commissioner Cahill**, seconded by **Commissioner Duffy**, to recommend to Mayor Ward the draft resolution presented to the APCC. **Commissioner Cahill** read the "Whereas" recommendations of the draft resolution into the record for the commission to consider.

"Therefore, be it resolved that the Air Pollution Control Commission recommends that the Fairbanks North Star Borough Assembly re-appropriate the funds approved for the retrofit control device testing to develop the protocols, quality assurance, project plan and lab verification of the units and find and allow the borough staff to work with manufacturers and others to continue testing".

Discussion ensued with regard to the recommended motion.

Commissioner Weltzin suggested perhaps adding something to reference the new ESP design.

Commissioner Pollen commented that in the list of “Whereas” the APCC recommendation seems to be paralleling the staff recommendation.

Commissioner Cahill clarified that in the “Whereas” she was very explicit in putting the specifics such as this so that there is some flexibility should new devices be developed so that with that catch all about continuing testing new technologies we haven't said we're not testing these stoves, we're only not testing these particular appliances.

Commissioner Pollen commented that he was fine with that as it addressed his concerns.

Commissioner Duffy concurred with the edits that were made to the original motion.

ROLL CALL:

Eight (8) in favor: Pollen, Weltzin, Douglas, Givens, Tomaszewski, Duffy, Cahill and Hook

Zero (0) opposed:

G. COMMISSIONER'S COMMENTS

Chair Hook commented that staff will work to schedule additional meetings of this commission for the future based on essential needs.

Commissioner Cahill thanked staff for their hard work and the commission for their participation in the meeting this evening.

Commissioner Pollen echoed Commissioner Cahill's comments.

Commissioner Givens thanked staff, the commission and the other entities that participated in this project.

Commissioner Duffy thanked Commissioner Cahill for her work drafting the “Whereas” statements. He felt that the meeting was successful.

Assembly Member Tomaszewski introduced himself to the commission and stated that he looks forward to working with the commission in the future. **Chair Hook** suggested that she reach out to him in the future to have a conversation about how he may better serve this commission as an Assemblymember.

Chair Hook spoke to the importance of continuing testing in the future and the challenges with continued testing.

H. AGENDA SETTING

I. ADJOURNMENT

There being no further business, the meeting was adjourned at 9:15 p.m.

Draft