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## Wood Devices Work Group – August 16, 2018

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### In Attendance:

#### Voting Members

Dan Givens  
Lisa Baraff  
Jimmy Fox  
Chad Schumacher  
David Fish

#### Non-Voting Members

Bob Dulla (Sierra Research)  
Nick Czarnecki

#### Facilitation Team

Sherry Modrow

#### by audio:

Lisa Herbert  
Donna Brady Robertson

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## Work Group Discussion

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### Hydronic heaters

- 52% of pm 2.5 in nonattainment area comes from these heaters, only 2% of overall number of devices
- Home retrofits assume 30% efficiency gains. However, the reduction in pollution gained from retrofitting 200 homes (costing \$2m) is reversed by a single home hydronic heater
- Heaters are currently restricted to 330 feet from closest property line and 660 feet from schools.
- Key is to write rules that work
- Testing: would retrofit on devices make a difference?
- ESP rated size - could not be installed on hydronic heater due to emission overload. Possibly install two in series on device: not tested
- Loads peak at 300 gph - even at a retrofit with 90% emission, it still would emit 30 gph
- No off-the-shelf technology available to adequately reduce emissions from hydronics. Cost of tailoring individually would exceed cost of device
- Existing hydronic heaters follow stage alerts unless NOASH, and those must meet rule of less than .1 lb/BTU
- Code allows phase-out of unlisted hydronic heaters. If APCC says no, it cannot operate during curtailment
- Hydronic burners without NOASH options = upgrade (WSCOP); replacement with installation of oil burning system is around \$14,000

### Goal: Registration of all heating devices

- Compliance rates will increase; there will still be compliance issues
- Incentives
- Penalties

### Need consistent, dry fuel sources

- Dry wood will bump up our saturation level 10-15% but will not get us far enough toward attainment
- Aurora Energy considering wood kiln with capacity of 14,000 cords per year. Looking at cost to dry wood using steam district heating

- Would expand local wood-harvest industry

**Ultimately FNSB must greatly reduce number of wood burning devices.**

- However, consistent dry wood source PLUS having ESPs on devices will move the bar on how many wood devices can continue to be used in FNSB
- A stove rated at 2.5 gph burning wood with over 18% moisture will burn at 10+gph
- Dry wood in new stove can reduce emissions from 10 gph to 1.5 gph, and adding ESP can provide same results as pellet stove

**Emission testing**

- Need a standard fuel source for emission testing
- Why was 2.5 grams per hour chosen?
  - Nick: 2020 standard is 2.0 gph and 2.5 gph intent was to get close
- Catalyst can add positive effect
- Use timeline: qualified for WSCOP until certain date
  - After that date, device must be removed