From: Davenport, Greg <gdavenport@hvac.mea.com>
Sent: Friday, June 10, 2022 3:26 PM
To: Kjell Anderson <kanderson@lmnarchitects.com>; Braaksma, Krista (DES) <krista.braaksma@des.wa.gov>
Subject: TAG follow up thoughts

Kjell and Krista, you did a great job with a complex process. Thank you very much!

- If you can try to clean up 024 with the bit that got lost when the TAG passed the proposal at the MVE committee that would be great. The e-mail I sent **[see below]** has suggested language to correct the issue. Since this will give HVAC contractors and builders more options to meet our code, I think the HVAC contractors and builders on the TAG would likely be in support of this clean up. The Cadmus study graph does a good job illustrating why we still want to use cc ASHPs in the 24-30F design temp range rather than standard heat pumps with large strip heat kits. If you have any questions on the reasoning for this, let me know.

- It dawned on me today that given all the discussion of housing affordability, we are missing any representation from the affordable housing industry on the Energy TAG. Gomer Roseman from Habitat Tacoma would be a great addition next time if he is not retired. Most affordable home builders build above code and embrace high performance home building practices. Perhaps next Energy TAG can include someone from affordable home building.

Have a great weekend!

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023 (9.5 HSPF Central Heat Pump) came out ok with the way it was re-worded since there is no relaxation to encourage cc ASHPs at above or below 23F.

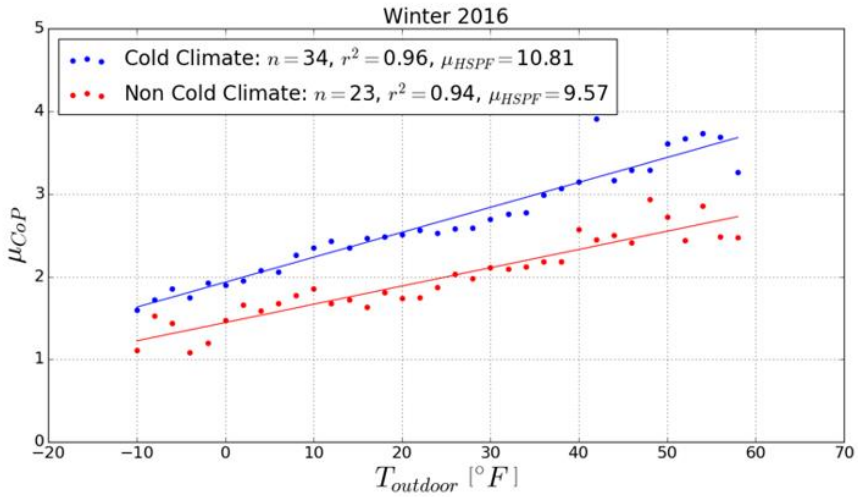
Since 024 has the relaxation (10 HSPF cc ASHPs vs 11 HSPF standard heat pumps) to encourage cc ASHPs, some of the intent got lost in the rewording. The intention is to allow builders to claim this credit when they use a NEEP qualified cc ASHP of 10HSPF or greater whether or not the design temp is ≤ 23F. Most standard heat pumps really lose output below 35F. We can encourage better HVAC design and energy efficiency on this one if we allow builders to use cc ASHPs @ 10 HSPF regardless of design temp. The attached graph from a Cadmus study illustrates design temps and performance of standard vs cc ASHPs very nicely and shows that homes in the 23F-35F will benefit significantly from being included in the exception.

I took a stab at wording 024 to capture the original intent. See attached.

Kjell, can we revisit this in an upcoming meeting and see if we can fix this bit? I am ok if we put the graph up on screen and I can explain it. My feeling is that this will not be a contentious fix with the group.

Thanks!

Cold Climate Performance



Average CoP vs. Outdoor Air Temperature

Proposed code change text: (Copy the existing text from the Integrated Draft, linked above, and then use underline for new text and ~~strikeout~~ for text to be deleted.)

3.5[a] Air-source, centrally ducted heat pump with minimum HSPF of 11.0.

~~If you use a cold climate heat pump listed as a qualified product on the NEEP cold heat pump list, the minimum HSPF required for this credit is 10.0 HSPF.~~

~~In areas where the winter design temperature as specified in WAC 51-11C-80100 is 23~~°~~F or below, an air source heat pump serving a centrally ducted system shall be you must use a cold climate variable capacity heat pump listed as a qualified product on the NEEP cold climate heat pump list, the minimum HSPF required for this credit is 10.0found on the NEEP cc ASHP qualified product list to claim this credit.~~ If you use a centrally ducted air source cold climate variable capacity heat pump (cc VCHP) found on the NEEP cc VCHP qualified product list, you may use a system with a minimum of 10 HSPF and claim this credit.

In areas where the winter design temperature as specified in WAC 51-11C-80100 is 23°F or below, homes shall use a cc VCHP with a minimum of 10 HSPF found on the NEEP qualified product list in order to claim this credit.

<Footnote a still applies and supplmental heat ≤ 5 kW may be used if needed.>

To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the heating equipment type and the minimum equipment efficiency.

MOVE this language to Chapter 6

The NEEP cold climate heat pump list can be found here: https://neep.org/heating-electrification/ccashp-specification-product-list.

~~To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the heating equipment type and the minimum equipment efficiency.~~

~~<Footnote a still applies and supplmental heat ≤ 5 kW may be used if needed.>~~