OFFICE OF AIR QUALITY PLANNING AND STANDARDS
RESEARCH TRIANGLE PARK, NC 27711

09/23/2024

Mr. John Steinert
Vice President, Hearth Products Division
PFS-TECO Laboratories
11785 SE Hwy 212, Suite 305
Clackamas, OR 97215

Dear Mr. Steinert,

I am writing in response to your letter dated September 20, 2024, in which you request approval of an alternative test method for demonstrating compliance with New Source Performance Standard (NSPS) Subpart AAA, Standards of Performance for New Residential Wood Heaters (Subpart AAA). The U.S. Environmental Protection Agency's (EPA) Office of Air Quality Planning and Standards is the delegated authority for approval/disapproval determinations on any major alternatives to test methods and other compliance determination procedures required under 40 CFR parts 59, 60, 61, 63, and 65.

As required by 40 CFR 60.534(a)(1)(i), an affected wood heater must:

Conduct testing with crib wood using EPA Method 28R of appendix A-8 of this part or an alternative crib wood test method approved by the Administrator or the ASTM E2779-10 (IBR, see § 60.17) pellet heater test method to establish the certification test conditions and the particulate matter emission values.

With this request, you are seeking clarification regarding the definition of "Maximum achievable burn-rate" found in EPA Method 28 (40 CFR 60, Appendix A), Sections 8.1.1 and 8.1.1.1, which are required for compliance through Section 2.1.1 of EPA Method 28R (40 CFR 60, Appendix A). Specifically, you point out that while the text of the method defines the maximum burn rate as:

8.1.1.1 Maximum Burn Rate for Category 4, the wood heater shall be operated with the primary air supply inlet controls fully open (or, if thermostatically controlled, the thermostat shall be set at maximum heat output) during the entire test run, or the maximum burn rate setting specified by the manufacturer's written instructions.

Whereas the table that provides numeric ranges for each burn rate category places burn rates that fall below 1.9 kg.hr in Category III, as shown below:

Average kg/hr (lb/hr) dry basis

Category 1	Category 2	Category 3	Category 4
<0.80	0.80 to 1.25	1.25 to 1.90	Maximum
(<1.76)	(1.76 to 2.76)	(2.76 to 4.19)	burn rate

You specifically seek clarification as to how PFS-TECO test laboratory should categorize and time weight emissions test results where the appliance was operated with the primary air inlet controls fully opened and/or thermostatic controls set at a maximum heat output during the entire test run but where the appliance burn rate, when calculated, falls below 1.9 kg/hr. Such a test result meets the written criteria for Maximum Burn Rate as described in Method 28, section 8.1.1.1 but would fall into Category 3 if held to the numeric ranges in the table (above) found in Method 28, section 8.1.1. You specifically ask for an Alternate Test Method for an FPI- Regency Fireplace model F1150-1 as well as model variants I1150-1, CI1150-1 and HI1150-1 appliance(s) where the manufacturer indicates that the burn rate, when operated with air controls fully open, is likely to fall below 1.9 kg/hr.

EPA notes the confusion caused by the written and tabular information in Method 28, and we agree that an Alternate Test Method is appropriate to resolve this concern in the near term. With the following direction, we approve your alternative test method request for certifying wood heaters using EPA Method 28 through Method 28r.

1. All attempts at achieving a maximum burn rate must be conducted with the appliance air controls fully open, or the thermostat set to maximum heat output for the entire duration of the test. Documentation of this must be included in the test report.
2. Any test run with a burn rate above 1.9 kg/hr must be treated as a Category 4 test run for the purposes of the compliance test and weighted average of the emissions test result.
3. Any test run meeting the requirements listed in #1 (above) where the calculated burn rate falls below 1.9 kg/hr must complete the following:
    a. Must be compared to any other test run that falls within Category 3
    b. The highest burn rate test result of all Category 3 tests MUST be treated as the Maximum Burn Rate test and included as a Category 4 test result in the test method weighted emissions averaging calculations.
    c. Should the lab find it necessary to exclude the test run identified in item b (above) two more maximum burn rate tests would be required to replace that test run. In this instance, the highest 2 burn rate test results that fall into Category 3 would then be treated as Maximum Burn Rate tests with regard to weighted averaging. Should 1 or both of these test runs result in a Maximum Burn Rate above 1.9 kg/hr, that(those) test run(s) must be used as the Category 4 test runs.
4. A copy of this letter must be included in each certification test report where this alternative test method is utilized.

It is reasonable that this alternative test method approval be broadly applicable to all wood heaters subject to the crib fuel test requirements of 40 CFR part 60, Subpart AAA. For this reason, we will post this letter as ALT-161 on our website at *http://www3.epa.gov/ttn/emc/approalt.html* for use by other interested parties. This alternative method approval is valid until such time that Method 28 is revised

to clarify the maximum burn rate requirements, or Subpart AAA and QQQQ are revised or replaced to require a different certification method, and at such time, this alternative will be reconsidered and possibly withdrawn.

If you have additional questions regarding this approval, please contact Michael Toney of my staff at 919-541-5247 or toney.mike@epa.gov.

Sincerely,

STEFFAN JOHNSON

Digitally signed by STEFFAN JOHNSON
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Steffan M. Johnson, Group Leader
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