

Written Comment emailed to NEJAC by 12/19/2023 and to WHEJAC by 12/20/2023.

My name is Linda Karr. The 501c3 nonprofit I represent is Residents Against Wood Smoke Emission Particulates.

<https://RAWSEPresidents.com> with over 625 videos on Youtube and podcasts on Spotify.

Congratulations on NEJAC's 8.8 million dollar grant for assessing emissions from (indoor residential) wood burning devices.

I would like to make 10 points, which are reasons to replace EPA NSPS for wood stoves with a complaint based system for shutting down polluting indoor residential wood stoves, to protect human health and slow climate change. The complaints could be made by near neighbors of indoor residential wood burners, who are sickened when PM2.5 from wood smoke enters their yards and raises the level of PM2.5 in the ambient air. Three Excel Files are also attached. Instructions showing how the Excel Sheet calculations were made is point 11. The attached and downloadable at Coast to Coast at <https://RAWSEPresidents.com> Excel files demonstrate how the calculation is made (points A, B, C and D)

A) California, Humboldt County, Trinidad PM2.5 above 12 ug/m3 63% of the time in a 3 day period, and above 35 ug/m3 18% of the time in a 3 day period, and

B) Wisconsin, Dane County, Madison, Elinor Street PM2.5 above 12 micrograms per cubic meter 99% of the time in a 3 day period, and above 35 micrograms per cubic meter 59% of the time in a 3 day period, and

C) Maine, Kennebec County, Winslow PM2.5 above 12 micrograms per cubic meter 83% of the time in a 3 day period, and above 35 micrograms per cubic meter 6% of the time in a 3 day period

(A, B & C use PurpleAir PM2.5 data from 7AM 12/6/2023 to 7AM 12/9/2023)  
D) Example of 3 day PurpleAir PM2.5 data download 7AM 12/6/2023 to 7AM 12/9/2023, in this case for Madison Wisconsin.

Points 1 to 10.

1) Modeling using New Source Performance Standards (NSPS) is not needed for indoor residential wood burning stoves. Certification of wood stoves by the Environmental Protection Agency (EPA) was described by the Office of the Inspector General (OIG), watchdog of the EPA, in February 2023 as a failed program. The reason certification of wood stoves has failed, and resulted in wood stoves being manufactured and sold which routinely exceed even by lax safety standards of the EPA (2 grams of PM2.5 per hour from a stove burning cord wood) is because of lobbying by the wood stove industry resulting in giant loopholes to compliance in the system.

2) Real Life PM2.5 Monitoring is needed for indoor residential wood burning.

3) Data Gathering and Decision Making should be done by near neighbors of indoor wood burners whose smoke enters the near neighbors yards and sickens them.

4) If the government can devise a system for downloading 3 day PurpleAir PM2.5 monitor data and using Excel files to calculate percent of time PM2.5 levels in the near neighbors' yard were above National Ambient Air Quality Standards (NAAQS) using EPA limits (currently 12 micrograms per cubic meter annually and 35 micrograms per meter cubed average in a 24 hour period), that method of collecting evidence should replace NSPS Modeling overseen by the wood stove industry.

5) RAWSEP has created such a monitoring system showing percentage of time above NAAQS in a 3 day period. RAWSEP Coast to Coast videos show how this is done every 3 days for 23 (and counting) resident-owned PurpleAir Monitors from California to Wisconsin, and on to Maine. Coast to Coast Excel Files are downloadable at <https://rawsepresidents.com> and three representative Excel Files, for Trinidad, California, Madison, Wisconsin, and Winslow, Maine are attached to this comment. Using the simple mathematical formula used by the Department of Natural Resources (DNR) in Wisconsin to correlate PurpleAir PM2.5 monitor data with data from EPA PM2.5 \$100,000 monitors, when PurpleAir and Regulatory PM2.5 monitor data is put side by side on U S E P A AirNow Maps of Smoke and Fire, RAWSEP uses the mathematical formula (PA times 0.504) plus 1.8314, within 3 uploaded Excel Files. All of these three PurpleAir PM2.5 monitor locations are hyper-localized in the back yards of near neighbors of indoor residential wood burners whose wood smoke PM2.5 emissions enter the near neighbors' yards and sicken them. During wood smoke incursions, near neighbors do not venture out their sealed homes and rely on multiple air purifiers to maintain breathable air within their homes. These actions of self-defense were like those advised when Canadian wildfire smoke invaded the United States in June 2023, and areas like New York had a rise in hospitalizations and emergency room visits, and a decline in the number of people making an outdoor commute to work or children to school.

6) Indoor residential wood burners are often more affluent than their near neighbors.

7) On December 2nd RAWSEP contacted a group of 60 rural farmers. 27 of the 32 wood burners contacted expressed interest in exchanging their wood stoves for Heat Pumps, given that in 2024 there will also be Federal rebates for Heat Pumps up to \$8,000 per household based on a sliding income scale.

8) RAWSEP also told the rural farmers about a RAWSEP grant that is being written to make up any deficit above the Federal rebate to ensure that exchanging a heat pump for a wood stove will not put the farmer out of pocket, for those of modest means.

9) RAWSEP was given an Expert Match from the Department of Energy (D O E) to help write the grant.

10) RAWSEP will also contact urban indoor residential wood burners with the identical offer for heat pumps highly subsidized in exchange for indoor residential wood stoves. RAWSEP hopes that this will be a demonstration grant to show government how to replace certification of wood stoves with real world PM2.5 monitoring, as a way to regulate and end the wood stove emissions that sicken near neighbors, by shutting down polluting indoor residential wood burning stoves, one by one if necessary, using a complaint based system. Wood smoke is 90% PM2.5, particulate matter of 2.5 micrometer size, the perfect size to infiltrate the human lung, setting off a cascade of human health problems and early deaths. Wood burning emits more PM2.5 and C O 2 than the fossil fuel coal burning. Wood burning emits 450 times the PM2.5 than natural gas burning.

11) Instructions on use of Excel files

5 Excel Pages: 3 day % above NAAQS using PurpleAir PM2.5 calculation in Excel, with correlation to EPA Regulation PM2.5 monitor, using PurpleAir Data download from 1 resident-owned monitor. Example Template Wisconsin, Madison, Elinor Street 12/6/2023

2) Main Excel page. 2A) Paste of download data at A6 using Paste 123 2B) After paste of PurpleAir Download. Auto correlation of PurpleAir to EPA Regulatory PM2.5 Monitor data using simple mathematical formula  $(PA \times 0.504) + 1.8314$  in Columns E through G will Autopopulate 2C) Copy A6:G438, and then paste 123 to YELLOW page at A1, then paste 123 to Orange Page at A1, then paste 123 to RED Page at A1.

3) YELLOW Excel page 3A) 12 micrograms per cubic meter 3B) Conditional Formatting 12 plus is YELLOW cell color 3C) Sorted YELLOW cell color on top) 3D) count of YELLOW cells

4) ORANGE Excel page 3A) 25 micrograms per cubic meter 3B) Conditional Formatting 12 plus is ORANGE cell color 3C) Sorted ORANGE cell color on top) 3D) count of ORANGE cells

5) RED Excel page 3A) 35 micrograms per cubic meter 3B) Conditional Formatting 12 plus is RED cell color 3C) Sorted RED cell color on top) 3D) count of RED cells

6) After number of sorted rows of YELLOW on YELLOW page, number of sorted rows of ORANGE on ORANGE page and number of sorted rows of RED on RED page 6A) entered at Main page E5, 6B) E6, and 6C) E7. This will auto calculate percent above NAAQS at 6D) B4 on Main page 6E) C4 on Main Page and 6F) D4 on Main Page.

7) Copy 7A) A1:D5 on Main Page, then 7B) Paste 123 or paste Link N (most right Paste choice) in to a Word file.

8) This Word file information is used for the chart of all residents owned monitor 3 day percent data on RAWSEP Coast to Coast, which data appears in Youtube videos, Spotify podcasts, and saved as a PDF on the RAWSEP website <https://RAWSEPresident.com>

9) Excel file Templates and actual calculation files for 23 monitor locations every 3 days can now be downloaded directly from <https://rawsepresidents.com> Or Email [rawsepresidents@gmail.com](mailto:rawsepresidents@gmail.com) for Excel Template to be emailed to you, if you own a PurpleAir PM2.5 monitor, and are a near neighbor of an indoor residential wood burner whose PM2.5 smoke enters your yard and sickens you.