UNITED STATES CLEAN HEAT & POWER ASSOCIATION

February 21, 2012

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Environmental Protection Agency
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Comments on Proposed Rule, Reconsideration of Final Rule: National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, 76, Fed. Reg. 80598 (Dec. 23, 2011)

Dear Administrator Jackson:

Thank you for the opportunity to comment upon and commend the December 23, 2011 adaptations in the Reconsideration of Final Rule affecting boilers and process heaters.

In our Petition for Reconsideration filed on May 18, 2011[1] we encouraged among other issues:

- Modification of the Output-Based Alternative Compliance Mechanism To Allow More Facilities To Benefit.
- Clarification that Facilities May Simultaneously Adopt the Alternative Output-Based Compliance Standard and Average Emissions.
- Making the Energy Assessment Requirement More Robust By Expanding the Definition of Cost-Effective Energy Efficiency Improvements.
- Refining Engineering Cost Analysis to Account for Savings Identified in the Energy Assessment.

On behalf of the combined heat and power industry, the U.S. Clean Heat & Power Association (USCHPA) commends the steps that were taken to move in the directions that we encouraged.

However, there is still work to be done and we suggest herein further simple modifications and refinements in response to the only areas open for comment, i.e. the items included in V. Discussion of Issues for Reconsideration and VI. Technical Corrections and Clarifications[2] and their cross-references elsewhere.

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[1] http://www.uschpa.org/files/public/AIE%20USCHPA%20Industrial%20MACT%20Final%20Reconsideration%20Comments%205_19_2011.pdf

[2] (76 FR 80606-80620)

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USCHPA Is A Party At Interest

USCHPA is a trade association whose membership includes manufacturers, suppliers, and developers of combined heat and power (CHP) systems. The Final Rule will affect the existing CHP systems as well as new CHP, in both instances including where employed waste heat recovery (WHR) systems.[3] USCHPA is definitely a party at interest.

USCHPA's specific comments are attached. If there are questions EPA may contact Ruben S. Brown, M.A.L.D., President, The E Cubed Company, LLC at brown@ecubedllc.com.

Thank you for the opportunity to comment.

Very truly yours,

Jessica H. Bridges, CAE IOM
Executive Director
U.S. Clean Heat & Power Association

[3] Hereinafter CHP will refer to both CHP and WHR.

EPA-HQ-OAR-2002-0058

Specific Comments Due February 21, 2012
by the US Clean Heat and Power Association (USCHPA)
On Proposed Rule,
Reconsideration of Final Rule: National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, 76, Fed. Reg. 80598 (Dec. 23, 2011)

The U.S. Clean Heat & Power Association (USCHPA) proposes herein simple modifications and refinements in response to the only areas available for comment, i.e. the items included in V. Discussion of Issues for Reconsideration and VI. Technical Corrections and Clarifications[4] and their cross-references elsewhere.

Background Perspective On Combined Heat and Power

Combined Heat and Power (CHP) is the simultaneous generation of electricity and useful thermal energy. Currently supplying eight percent (8%) of U.S. generating capacity, CHP systems can reach efficiencies above eighty percent (80%). There is approximately 82 GW of CHP installed in the U.S. Industry estimates indicate the technical potential for additional CHP at existing sites in the U.S. is between 130 and 170 GW, plus an additional 10 GW of waste heat recovery CHP. This represents heat and power generating capacity that is readily available, provided policies are established to support further CHP deployment.

CHP lowers demand on the electricity delivery system, reduces reliance on traditional energy supplies, makes businesses more competitive by lowering their energy costs, reduces greenhouse gas and criteria pollutant emissions, and refocuses infrastructure investments toward next-generation energy systems.

> Using CHP today, the United States already avoids more than 1.8 Quadrillion British thermal units (Quads) of fuel consumption and 241 million metric tons of carbon dioxide (CO2) emissions annually compared to traditional separate production of electricity and thermal energy. This CO2 reduction is the equivalent of removing more than 45 million cars from the road. In addition, CHP is one of the few options in the portfolio of energy alternatives that combine environmental effectiveness with economic viability and improved competitiveness. [5]

Already harnessed by many industrial, commercial, and institutional facilities, CHP is a proven and effective energy resource that can be immediately deployed to help address current and future global energy needs by incorporating commercially available and domestically produced technology.

[4] (76 FR 80606-80620)
[5] Oak Ridge National Laboratory, Combined Heat And Power, Effective Energy Solutions for a Sustainable Future, December 1, 2008, ORNL/TM-2008/224. P3. ORNL's data cites 1.9 quads of fuel savings and 248 MMTs of CO2 savings based upon 85GW deployed. The lower numbers represent current estimates based upon 82GW deployed.

Specific Comments

Selected comments are addressed in the order of occurrence from page 76 FR 80606 to 76 FR 80620 (Discussion of Issues for Reconsideration and Technical Corrections and Clarifications)

B. Output-Based Standards
1. Revisions to Boiler Efficiency Analysis – (76 FR 80606-80607)

USCHPA - Changes to the Boiler Efficiency calculation to facilitate output-based standards are appropriate. EPA should also consider the authoritative data contained in the Energy and Environmental Analysis report from 2005 that is a boiler industry survey putting efficiency rates at approximately 78% (averaging black liquor fired, coal, and natural gas-fired systems.) It is available on the American Boiler Manufacturers Association website. [6]

2. **Other Changes to Output-Based Provision (76 FR 80607)**
b. Output Based Standards For Units That Generate Electricity Only. –

USCHPA – The revision here to the definition of "steam output" to provide fuel-specific conversion factors in units of pounds per megawatt-hour is appropriate.

c. Clarification that output-based standards are alternative standards to the input-based standards.

USCHPA – This is appropriate.

C. Subcategories
6. Gaseous Fuel Specification (76 FR 80609)

USCHPA – With respect to the inclusion of a gaseous fuel specification based only on Hg level in the gaseous fuel EPA is correct in realizing that emissions data for natural gas-fired units show the overwhelming majority of emissions to be below the level that can be quantified by available test methods and in applying that understanding to units combusting other gases with contaminant levels similar to natural gas. We concur that a work practice standard is the appropriate standard for these units.

6. Averaging Times (76 FR 80610)

USCHPA – The EPA has determined that the 30-day rolling average for parameter monitoring and demonstration of continuous compliance with operating limits is appropriate for this rule. From review of studies the EPA expects that variability of long term emissions averaging will be about half that represented by the short term testing proposed in the Final Rule (12-hour block). We agree that using the 30-day rolling average will reduce overall variability.

G. Tune-Up Work Practices (76 FR 80614)

1. Requirements for Small and Limited-Use Units (76 FR 80614)

USCHPA – With EPA rejecting Petitioners requests to exempt small natural gas and light oil fired units (2 MMBtu/hr to 10 MM/Btu/hr) from the rule it correctly decreases the frequency requirement to every five years from every two years for tune-up of smaller natural gas, refinery gas and other clean fuels that meet the fuel specification. However we support setting the upper

[6] http://www.abma.com/ICI_Boiler_Population_Characterization.pdf

limit at <= 10 MMBtu/hr.

2. Clarifications of Certain Tune-up Provisions (76 FR 80614)

USCHPA – First, we appreciate EPA removing the every 36-month inspection provision if it would require the unit to shut down when it would not have otherwise been required to power down. It is appropriate to propose that burner inspections that cannot be completed during tune-up should be delayed until the next scheduled shutdown.

Second, EPA is correct in setting a period of 30 days after the tune-up for making CO adjustments and optimization.

Third, EPA is correct in clarifying that when a burner inspection is difficult or impossible to meet they will not require a physical inspection "that cannot reasonably be completed."

3. Conducting Initial Tune-Ups at New Sources (76 FR 80614)

USCHPA – It is appropriate that EPA recognize that tune-ups generally occur as part of installation and that the initial tune-up after installation can take advantage of the learning curve in efficiently operating new units. Therefore having the initial tune-up within one year after start up provides appropriate opportunity to improve efficiency based upon experience.

H. Energy Assessment (76 FR 80614-80615)
1. Scope (76 FR 80614-80615)

USCHPA – EPA proposes to restrict the energy assessment to sources and uses (our terms) on-site. USCHPA questions this. USCHPA also questions the limitation to rely on a two-year or less payback criterion. Many capital investments, including combined heat and power systems, typically have longer payback periods, considering all benefit streams (both thermal and electricity). This should be reconsidered and broadened to permit greater aggregation of benefit streams. For example, Federal, State and even local tax credits should be applied to the benefit side of the calculation.

Removing the benefit obtained by reducing electricity purchases can undermine unnecessarily the benefits of CHP installations, especially one-off installations.

Unfortunately when CHP is involved, this approach will undervalue the benefit of the CHP system, both in energy savings and in emissions reductions.

As indicated earlier, CHP has off-site benefits because the site doesn't have to buy so much electricity from "away." The energy savings and the CO2 avoidance in the quotation from Oak Ridge National Laboratory cited above and referenced in fn 4 is based upon avoidance of energy consumption both at the site and away.

Remember that the existing CHP fleet (82 GW) already avoids more than 1.8 Quadrillion British thermal units (Quads) of fuel consumption and 241 million metric tons of carbon dioxide (CO2) emissions annually compared to traditional separate production of electricity and thermal energy. This CO2 reduction is the equivalent of removing more than 45 million cars from the road. The potential additional CHP of 130-170 GW could double these benefits for the additional installations in terms of fuel consumption and CO2 reduction.

Fortunately these benefits can be readily calculated for CHP projects at relatively low cost during the Energy Assessment Phase. We realize that cost of the Energy Assessments is an important factor in EPA's analyses. However, a ready tool developed by EPA already exists. It is the CHP Emissions Evaluator available from EPA's CHP Partnership.[7]

For perspective in examining the EPA position here, we looked at TABLE 5—SUMMARY OF CAPITAL AND ANNUAL COSTS FOR NEW AND EXISTING SOURCES[8] and took the cost estimate numbers for Energy Assessments Annualized Costs (considering fuel savings) that totaled $28 million and divided it by the number of affected sites (1704). The result is an annualized $16,432 per Energy Assessment. Using a tool such as the CHP Emission Evaluator, even if it requires some modification for the purpose, should not significantly raise the average energy assessment costs.

2. Compliance Date (76 FR 80614-80615)

USCHPA- EPA now proposes that the Energy Assessment for existing sources be completed by the reset compliance date. We appreciate resetting the compliance date for existing sources to three years from the date of publication of the final reconsideration rule and for new sources (new after June 4, 2010) to 60 days after the date of publication of the final reconsideration rule or upon startup, whichever is later.

3. Maximum Duration Requirements (76 FR 80615)

USCHPA - The shorter assessment time period is better, i.e. changing the maximum time from 1 day to 8 technical hours and from 3 days to 24 technical hours.

J. Work Practices During Startup and Shutdown (76 FR 80615)

USCHPA- EPA provides an adequate rationale for utilizing work practices rather than emissions limits during startup and shutdown periods. It is appropriate to treat startup periods as upward to 25% load and shutdown periods from 25% load downward. The duration of such periods is significantly both load and technology dependent. At least with CHP systems, running at 25% or less load is generally relatively inefficient and therefore the operation will likely be set to move through this ramping relatively rapidly as long as load needs are met.

K. Applicability (76 FR 80615)
4. Residential Unit Exemption (75 FR 80616)

USCHPA – EPA has proposed that residential boilers be exempted from the major source and the area rule and is proposing to define residential boiler as follows:

> *Residential boiler* means a boiler, used in a dwelling containing four or fewer family units, to provide heat and/ or hot water. This definition includes boilers used primarily to provide heat and/or hot water for a dwelling containing four or fewer families located at an institutional facility (*e.g.,*

[7] http://www.epa.gov/chp/basic/calculator.html

[8] 76 FR 80622

university campus, military base,
church grounds) or commercial/
industrial facility (*e.g.*, farm).

Congress encouraged exploration of the use of small-scale combined heat and power in residential heating appliances in EPACT (2005) Section 923.[9]

USCHPA is cognizant that advances in residential micro-combined heat and power technology have led since 2005 to the installation more than 120,000 systems in residences globally. These systems function with the heat/or hot water system. The description above aptly applies to these installations. We recommend that the definition be modified by the insertion of the words ***"and/or as part of a residential combined heat and power system" after the words "hot water".***

Residential boiler means a boiler,
used in a dwelling containing four or
fewer family units, to provide heat and/
or hot water **and/or as part of a residential combined heat and power system**. This
definition includes
boilers used primarily to provide heat
and/or hot water for a dwelling
containing four or fewer families located
at an institutional facility (*e.g.*,
university campus, military base,
church grounds) or commercial/
industrial facility (*e.g.*, farm).

L. Compliance 76 FR 80616

USCHPA – We are sensitive to the stated concern that the availability of equipment and installers will clash with the needs of electricity generating facilities affected by parallel rulemakings. Most users of CHP technology are much smaller than electricity generating facilities and may be placed further behind in the queue. Additional time is appropriate.

As indicated above in discussion of the Energy Assessments and the re-set Compliance timetable, we are supportive of the extension of the compliance schedule for existing facilities to at least three years from less than two years in the earlier version with provision for an extra year for installation of controls approvable on a case-by-case basis.

With respect to new sources, instead of the 60 day period after publication of the final reconsideration rule or 60 days after start-up whichever is later we recommend a 90 day period for similar reasons as stated above for the first five years then a switch to 60 days could be allowed.

M. Other Issues Open for Comment 76 FR 80617
1. Averaging Emissions

9 42 USC § 16213 - MICRO-COGENERATION ENERGY TECHNOLOGY

USCHPA – We are supportive of the goal to create flexibility that averaging could bring to fuel switching situations.

VI. Technical Corrections and Clarification 76 FR 80617

VI. Technical Corrections and Clarification/Corrections to 40 CFR Part 63, Subpart DDDDD

76 FR 80618
40 CFR 63.7533(b)(2) Amend this paragraph to clarify that the use of emission credits from implementation of energy conservation measures can only be used by existing units, and that these credits can be used to demonstrate initial and on-going compliance.

USCHPA – We are supportive of this use of emission credits obtained from energy conservation measures.

76 FR 80618
40 CFR 63.7533(c), (c)(1)(i), and (c)(3) Amend these paragraphs to change the date after which energy conservation measures can be used to generate credits from January 14, 2011, to January 1, 2008. January 1, 2008 is the same cut-off date for using a pre-existing energy assessment to satisfy the energy assessment requirement in Table 3 to subpart DDDDD.

USCHPA – We are supportive of this roll back in date from January 14, 2011 to January 1, 2008 for both the use of emission credits obtained from energy conservation measures and for pre-existing energy assessment.

76 FR 80619
40 CFR 63.7575 Revise the definition of ‘‘energy assessment’’ to clarify the length of days for each category of facilities.

USCHPA – As indicated above we are supportive of the shortening to 8 technical hours and 24 technical hours.

76 FR 80619
40 CFR 63.7575 Revise the definition of ‘‘liquid fuel’’ to include vegetable oil

USCHPA – This is appropriate.

76 FR 80620
40 CFR 63.7575 Revise the definition of ‘‘process heater’’ to include ‘‘units heating hot water as a process heat transfer medium’’ and to clarify that ‘‘waste heat process heaters are excluded from this definition’’ similar to the exemption allowed for waste heat boilers.

USCHPA – This is appropriate.

76 FR 80620
40 CFR 63.7575 Revise the definition of ‘‘steam output’’ to include a description of the total energy output for a boiler that generates only electricity.

USCHPA – This is appropriate.

76 FR 80620
40 CFR 63.7575 Revise the definition of ‘‘waste heat boiler’’ to clarify that the definition includes fired and unfired waste heat boilers.

USCHPA – This is appropriate.

76 FR 80620
40 CFR 63.7575 Revise the definition of ‘‘waste heat process heater to clarify that the definition includes fired and unfired waste heat process heaters.

USCHPA – This is appropriate.

76 FR 80620
40 CFR 63.7575 Add new definition of ‘‘30-day rolling average’’,

USCHPA – This is appropriate.

76 FR 80620
40 CFR 63.7575 Add new definition of ‘‘average annual heat input rate”

USCHPA – This is appropriate.

76 FR 80620
40 CFR 63.7575 Add new definition of ‘‘residential boiler”

USCHPA – See our recommendations above at the discussion on 4. Residential Unit Exemption (75 FR 80616). Insert the clause “and/or as part of a residential combined heat and power system” after the first appearance of the words “hot water”

76 FR 80620
40 CFR 63.7575 Add new definition of ‘‘biodiesel’’.

USCHPA – The addition of biodiesel to liquid fuels is appropriate.

76 FR 80620
40 CFR 63.7575 Add new definition of ‘‘vegetable oil’’.

USCHPA – The addition of vegetable oil to liquid fuels is appropriate.