November 13, 2001

Ms. Pamela J. Smith
Information Transfer and Program Integration Division (MD-12)
Office of Air Quality Planning and Standards
United States Environmental Protection Agency
Research Triangle, North Carolina 27711

Re: Comments on the Notice of Availability for Draft Guidance on Source Determination for Combined Heat and Power Facilities Under the Clean Air Act New Source Review and Title V Programs [66 Fed. Reg. 52403 (October 15, 2001)] [EPA Docket No. 01-25864]

***VIA* FACSIMILE, ELECTRONIC MAIL, AND FEDERAL EXPRESS**

Dear Ms. Smith:

On behalf of the Council of Industrial Boiler Owners ("CIBO"), I am pleased to submit the following comments on the Environmental Protection Agency's ("EPA") proposed guidance for Source Determination for Combined Heat and Power Facilities Under the Clean Air Act New Source Review and Title V Programs [66 Fed. Reg. 52403 (October 15, 2001)] [EPA Docket No. 01-25864].

CIBO is a national trade association of industrial boiler owners, architect-engineers, related equipment manufacturers, and universities representing 20 major industrial sectors. CIBO was formed in 1978 to promote the exchange of information between industry and government relating to energy and environmental policies, laws, and regulations affecting industrial boilers. CIBO membership represents industries as diverse as chemical, paper, cogeneration, steel, automotive, refining, brewing, combustion engineering, and food products. CIBO members also include operators of boiler facilities at several major universities.

On environmental issues, CIBO works closely with the EPA, the United States Department of Energy, state regulatory authorities and other governmental bodies to effectuate common-sense environmental regulation. We maintain that environmental regulatory schemes should provide industry with enough flexibility to effectively—and without penalty—modernize our aging energy infrastructure, since modernization holds the key to cost-effective

environmental protection. From these premises, we set forth our comments on the proposed guidelines below.

Background

Cogeneration, the combined generation of heat and power ("CHP"), represents an important energy supply option for many sectors in the economy. We are pleased that EPA, following the directive of the President's National Energy Policy Development Report, proposed guidelines to "promote CHP through flexibility in environmental permitting," and considers CHP "a key element to achieving the nation's energy goals…." As described in the proposed guidance, CHP facilities can operate at very high efficiency, representing an important way to improve efficiencies, diminish fuel demand, and reduce emissions. Further, reliability of power supplies to all energy users improves because CHP facilities generate power "on-site."

Many CIBO members operate combined heat and power facilities. CHP has been an important industrial technology predating the advent of central station generation and remains the core of the CHP inventory today. Industrial CHP facilities are important to industry and to the economy of the United States for their ability to provide electric, mechanical and thermal generation at the highest possible efficiency from a wide variety of fuels. The fuel diversity and the decentralized nature of CHP enhances national security by reducing our reliance on any one fuel or on exclusively centralized energy infrastructure. In addition, much industrial CHP uses waste or byproduct fuels to create useful energy from materials that otherwise would be incinerated, flared or disposed of as waste.

NSR Regulatory Reform is an Overriding Need

Development of guidance supposedly to address CHP facilities certainly does not reduce the need for NSR regulatory reform. Other opportunities exist through clarification of existing NSR requirements for EPA to encourage substantially the development of CHP projects that promote increased and more reliable energy supply and improved efficiency. The current NSR interpretation places obstacles in the path of efficiency improvements and even proper maintenance of existing equipment so that it operates efficiently. The primary problems are rooted in the administrative interpretations of NSR applicability to existing sources. EPA must apply a reasonable interpretation of the routine maintenance, repair, and replacement exclusion that would prevent NSR from interfering with activities that are typically performed at similar facilities, including those that allow improvement in materials and efficiency.

The emissions increase test also must be revised. The EPA's "actual to potential" emissions test predicts wholly unrealistic emissions increases because boilers do not operate at full capacity for all hours of the year. Only a reasonable "actual to future actual" type of test for changes to existing sources would provide a real evaluation of emissions increase and properly apply NSR for those cases with real and concrete emissions increases.

The proper interpretation of NSR would go a long way toward enhancing and supporting energy efficiency improvement in all ways, including use of CHP.

EPA's Attempt to Address the Source Separation Issue is Inaccurate and Ineffective

Recognizing the need to address the source separation issue, it is our understanding that EPA intends to set specific performance criteria to clarify source-definition issues related to independently-owned CHP facilities at or near thermal customer facilities. We are concerned about EPA's treatment of the source separation issue—in terms of source definition and criteria setting—in the proposed guidelines. These points of contention, delineated above, are discussed more fully below, including our recommendations for curing identified problems.

First, in terms of source definition, EPA indicates that it clarifies its interpretation of "how the regulations apply in determining the boundaries of the major stationary source which must apply for a permit when a CHP facility is constructed, owned and operated by a party other than the host or customers." However, the guidance does not clarify any of the issues related to source determinations. Rather, it seeks to create blanket approval for source separation for CHP facilities that meet certain criteria, which fails to resolve any underlying definitional issues. Further, the new criteria set forth are poorly defined and predicated on inappropriate bases. Notwithstanding the attempt to set a blanket exemption, in several places, the guidelines revert to the old NSR evaluation structure, raising and retaining the original definitional problems that the guidance purports to address.[1]

Second, our greatest concern is with the efficiency criteria established as the basis for application of this new guidance. Although there exists a need for some efficiency criteria, the sliding scale as a function of power-to-heat ratio is overly complex and yields little environmental benefit. As a sufficient alternative, we suggest a single efficiency value in the range of 60 percent gross CHP efficiency, including both electric and mechanical equivalent efficiency.

[1] For a fuller explication of this topic, please refer to the comments submitted by Trigen Energy Corporation.

Third, CIBO supports EPA's attempt with this guidance to promote the use of and encourage additional CHP systems, including the goal of doubling CHP by 2010. However, this goal is dependent on the increased application of CHP at existing industrial facilities. The ownership and operation of equipment can take many forms, including ownership by the industrial facility owner, third party ownership, joint venture ownership between the industrial owner and a third party, ownership by one entity and O&M by another. Any guidance that enhances the opportunity to install CHP facilities should be independent of and transparent to the ownership structure in order to be effective. Establishing an artificial distinction among owners is outside EPA's legal authority and will depress the critical growth of CHP facilities.

The guidance also limits the use of credits for netting to only those cases in which existing boilers are sold to the third party and then restrictions are placed on those boilers. This is illogical; if permit restrictions are a viable means to limit operations and emissions when owned by the third party, those same permit restrictions on those same boilers would also be a viable means to limit operations and emissions when the boilers are still owned by the industrial facility. To reject that position indicates a difference in permit compliance and enforcement practices, which cannot be the case. Equipment sale or transfer to a third party could present tax implications to the industrial facility and limit the usefulness of the guidance. While there are some cases where sales of boilers would occur, there are also cases where that is not the economical choice. The requirement for sale or transfer of the boilers to a third party should be eliminated from the guidance, and rather, the option of taking permit restrictions by the industrial owner should be allowed.

Fourth, the comparison of all CHP facilities with new gas-combined cycle (GCC) electric plants and gas industrial boilers is inappropriate. This guidance will affect new and old CHP facilities that burn a broad range of fossil and non-fossil fuels. All of these have higher efficiency than a non-CHP equivalent and they have higher efficiency than the electric utility average, but some may not achieve the same overall efficiency as a comparable new gas-based system. Since there is energy security and economic value in fuel diversity and use of waste and byproduct fuels, the rules should not create a disincentive against using these fuels. In particular, a system based on a single higher heating value ("HHV") efficiency for some fossil fuel fired units will disadvantage non-fossil-fuel fired boilers due to the inherent moisture content of the fuel, which results in a heat loss from the boiler. The use of mechanical drives (steam turbines) to replace electric motors is a good example of a change that could improve total efficiency, although not to the level of a new GCC facility.

Fifth, industrial boilers encompass a wide range of designs, vintage, fuels and operating conditions. If the EPA does need to include an estimate of boiler efficiency, that estimate

needs to account for this diversity. There is a very large difference between an average annual operating efficiency of a boiler and the design efficiency when operating at Maximum Continuous Rating (MCR). Thus, we believe it is imperative to include a range of boiler efficiencies common for industrial boilers in the proposed guidelines. To develop an accurate range of efficiencies, EPA must consider fully the many variables related to industrial boilers, including, *inter alia*, age, design, fuel (especially biomass fuels), and operating regime. An average annual operating value would certainly be less than 80 percent, more likely around 50 percent, especially if it has a heavy weighting of non-fossil fuel boilers. In many cases CHP modifications can have a substantial impact on the annual average facility efficiency, but not enough on the design efficiency at MCR to be considered under this guidance.

Sixth, the guidance suggests that the efficiency calculation should be net of parasitic loads. Accounting for all parasitic and house loads in a complex powerhouse would be extremely costly and unjustified. If such a program is instituted, allowances must be made for factoring or estimating parasitic or house loads based on commonly known operating variables such as total boiler steam flow, as determined by the owner/operator. Since electric utility plants must meter net electrical output, they have no need for accurate measurement of parasitic loads. Conversely, industrial facilities prove much more complicated and interactive considering many small energy streams. These issues unique to industrial facilities make the potential cost of metering and the complication of proving compliance very high. We believe basing the threshold on gross output and adjusting the value, if necessary, effectuates EPA's goal of encouraging the use of cleaner technologies in a more efficient and economic way.

Seventh, the EPA proposes a minimum electric generation fraction of 20 percent. This level excludes backpressure steam turbines, which comprise a large part of the industrial CHP inventory for both electrical generation and mechanical drives. These systems are highly efficient and commonly used in systems that burn all fuels, including waste and byproduct fuels. There is no reason to exclude them and every reason to include them. We suggest that the electric fraction limit should be no higher than 10 percent and that there be no limit on mechanical power generation.

Eighth, "technical capability" to provide steam to other customers implies that there could be a need for steam transfer facilities (piping) to be installed. That is not practical and will never be done on a speculative basis. The only valid requirement could be that there be a means of interconnection with another user of steam, for example, by a future steam valve being in place or some other means.

Conclusion

In summary, CIBO suggests that EPA first recognize and implement administrative action to clarify NSR applicability in order to address the principal problems directly preventing actions that can improve efficiency–namely a reasonable interpretation of the routine maintenance, repair, and replacement exclusion; and revising the emissions increase test from the "actual to potential" methodology to an "actual to future actual" methodology. EPA should directly address the issues of source definition and include mechanical power generation. If EPA wishes to take an alternative approach, that approach should apply only a single efficiency threshold, based on a more realistic depiction of the actual efficiency of industrial boilers, possibly in the range of 60 percent overall gross CHP efficiency. This gross efficiency should be defined as the boiler thermal efficiency at the steam header and electric and/or mechanical equivalent efficiency. Finally, we suggest changing the electric faction minimum to 10 percent and specifically stating no minimum for mechanical power generation.

As an organization comprised of many CHP facilities, CIBO appreciates the opportunity to provide comment in support of EPA's recognition of CHP as a key element in effectuating the President's call for increased energy efficiency and production. We hope our comments and recommendations will prove helpful as EPA develops final guidelines. If we can be of any assistance—to answer questions or provide more information—please do not hesitate to contact me.

Due to the short time and situation since September 11th, we would like to augment these comments with appropriate details on industrial energy efficiency within 15 days. It is our understanding that such subsequent comments will be deemed timely-filed by the Agency.

Very truly yours,

Robert D. Bessette
President
Council of Industrial Boiler Owners