

**From:** [Skip Brackbill](#)  
**To:** [Jacobs, Wendy](#)  
**Subject:** Combined Cycle Combustion Turbine Definition  
**Date:** Wednesday, November 11, 2015 8:29:05 PM  
**Attachments:** [image001.png](#)

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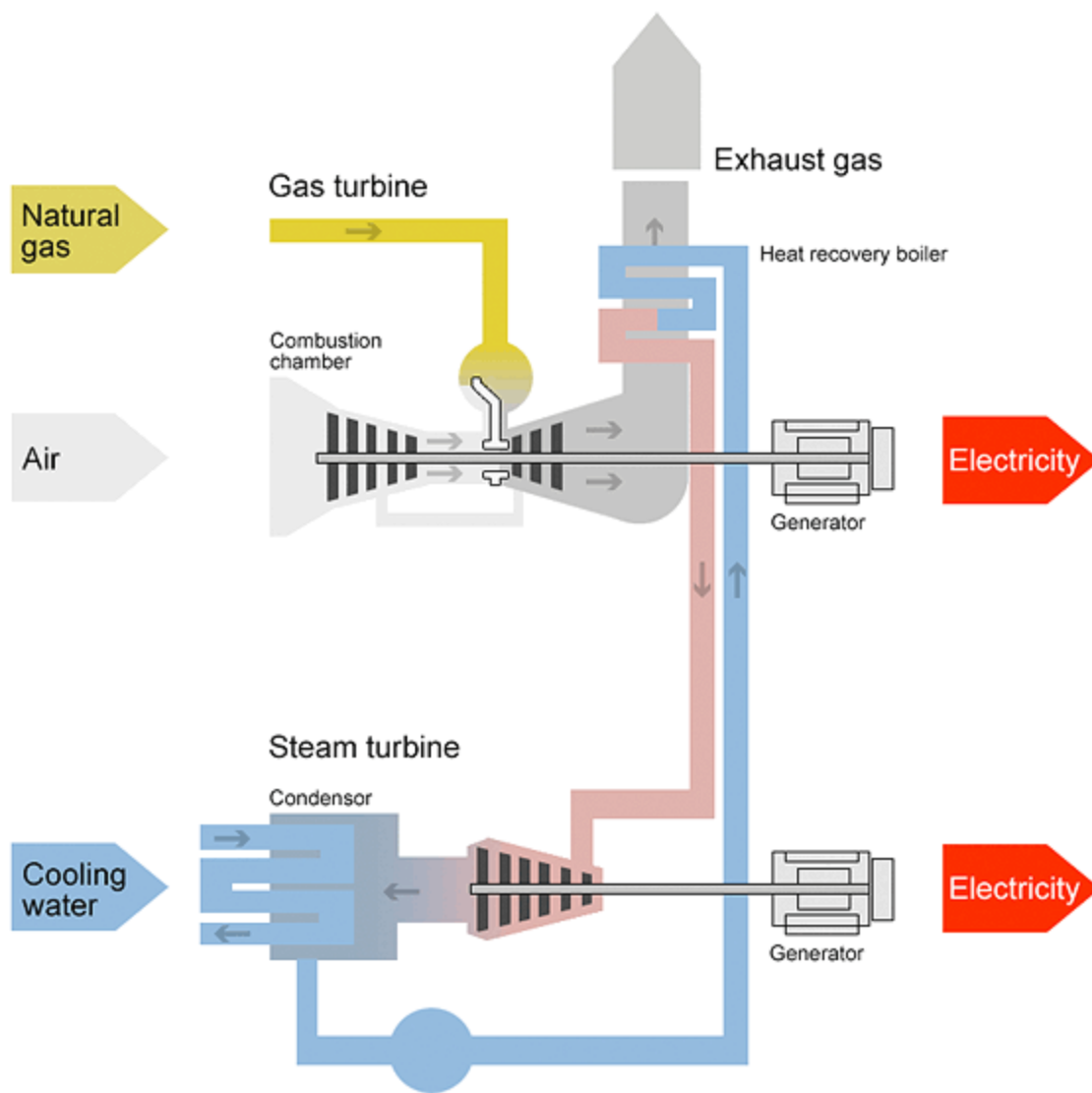
Gee, look who finally resurfaced! As you can see from below, I am now a resident of Virginia. My wife and I moved here to retire, and semi-retire, respectively.

Unfortunately, I was never able to participate actively in the Section 22 regulation revision development due to a host of other distractions. I've tried to keep aware of what's going in general terms by talking to several who are actively participating (the usual "suspects"!)

I finally have a comment. You may consider it semantics but I believe it is a definitional issue that is a pet peeve of mine but deserves consideration nonetheless.

The definitions of "Combined cycle combustion turbine" and "combined heat and power" also known as "cogeneration" are used almost interchangeably by the rule. But they are distinctly different technologies. A combined cycle gas turbine is not a cogeneration unit but a unit in which steam from the heat recovery steam generator is used to drive a steam turbine that drives a second electrical generator, see below. It is called a combined cycle unit because it improves the efficiency of the thermodynamic cycle. [See also: <http://electrical-engineering-portal.com/an-overview-of-combined-cycle-power-plant> ]

[Combined Cycle Combustion Turbine](#)



A cogeneration unit (cogeneration of electricity and useful heat) on the other hand uses only the turbine mechanical output to generate electrical power and the heat recovered by the heat recovery steam generator for building or process heating. I know, a seemingly subtle difference but different nonetheless.

With that in mind, I suggest the definitions be revised as follows:

“Combined cycle combustion turbine” means an internal combustion engine fueled by liquid or gaseous fuel, in which blades are driven by combustion gases to generate mechanical energy in the form of a rotating shaft that drives an electric generator or other industrial equipment, that recovers heat from the turbine exhaust gases to heat water or generate steam which drives a steam turbine that drives an additional electric generator, including a combined heat and power unit, but not including a boiler serving an EGU, ICI boiler, or reciprocating engine.

“Combined heat and power”, also known as “cogeneration,” means an internal combustion engine that drives an electric generator, and recovers heat from the internal combustion engine exhaust gases to generate steam or hot water for building or process heating ~~heat water unit steam-generating unit that simultaneously produces both electric (and mechanical) and useful thermal~~

~~energy from the same primary energy source.~~

Again, just suggestions for your consideration.

Best wishes to you and Merrily.

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