



CD#:		Date Rec'd.:		Log No.:		Proposal No.:	
------	--	--------------	--	----------	--	---------------	--

PUBLIC PROPOSAL FORM

FOR PUBLIC PROPOSALS ON THE INTERNATIONAL CODES
2003/2004 CODE DEVELOPMENT CYCLE

PLEASE SEE REVERSE FOR INSTRUCTIONS ON SUBMITTING PUBLIC PROPOSALS. PROPOSALS MUST COMPLY WITH THESE INSTRUCTIONS.

CLOSING DATE: All Proposals Must Be Received by March 24, 2003.

- 1) Indicate the format in which you would like to receive your Public Proposals Monograph (PPM), Report of the Hearing (ROH) and Final Action Agenda (FAA):

Paper * CD *Download from ICC Website

(*Note: A paper copy will not be sent to you if you have chosen the CD or Download format.)

- 2) PLEASE TYPE OR PRINT CLEARLY: FORMS WILL BE RETURNED if they contain unreadable information.

Name:	Ronald Majette				Date:	March 21, 2003
Jurisdiction/Company:	U.S. Department of Energy					
Submitted on Behalf of:	U.S. Department of Energy					
Address:	1000 Independence Avenue, EE-2J, 1J-018					
City:	Washington	State:	DC	Zip +4:	20585	
Phone:	202-586-7935	Ext:		Fax:	202-486-4617	
e-mail:	Ronald.Majette@hq.doe.gov					

- 3) *Signature: _____ Signature on File

*I hereby grant the International Code Council the nonexclusive, royalty-free rights, including nonexclusive, royalty-free rights in copyright in this Proposal and I understand that I acquire no rights in any publication of International Code Council (ICC), in which this Proposal in this or another similar analogous form is used. I hereby attest that I have the authority and I am empowered to grant this copyright release.

- 4) Cost Impact: Indicate if this Proposal: will will not increase the cost of construction.

- 5) Indicate appropriate International Code(s) associated with this Public Proposal – Please use Acronym:
(See back of this form or the instructions for list of names and acronyms for the International Codes):

- 6) Revision to: Section 803.2.6 & 803.3.3.5 Table _____ Figure _____

- 7) PROPOSAL Please check appropriate box:

Revise as follows: Add new text as follows Delete and substitute as follows: Delete without Substitution(s):

Show the proposed NEW, REVISED or DELETED TEXT in legislative format: ~~Line through text to be deleted.~~ Underline text to be added.

SECTION 802

803.2.6 Cooling with outdoor air. ~~Each system with a cooling capacity greater than 65,000 Btu/h (19 kW) located in other than Climate Zones 1, 2, 3b, 5a or 6b as shown in Table 302.1 shall have an economizer that will automatically shut off the cooling system and allow all of the supply air to be provided directly from outdoors.~~ Supply air economizers shall be provided on each cooling system as shown in Table 803.2.6(1).

Economizers shall be capable of operating at 100 percent outside air, even if additional mechanical cooling is required to meet the cooling load of the building. Where a single room or space is supplied by multiple air systems, the aggregate capacity of those systems shall be used in applying this requirement.

Exceptions:

1. Where the cooling equipment is covered by the minimum efficiency requirements of Table 803.2.2(1) or 803.2.2(2) and ~~meets the efficiency requirements of Table 803.2.6~~ meets or exceeds the minimum cooling efficiency requirement (EER) by the percentages shown in Table 803.2.6(2).

2. Systems with air or evaporatively cooled condensers and which serve spaces with open case refrigeration or that require filtration equipment in order to meet the minimum ventilation requirements

of Chapter 4 of the International Mechanical Code.

~~3. Systems under 135,000 Btu/h (40 kW) cooling capacity in Climate Zones 3c, 5b, 7, 13b, and 14.~~

{Delete Table 803.2.6 and replace with new Table 803.2.6(1) and Table 803.2.6(2) below}

Table 803.2.6(1) Economizer Requirements

Climate Zones	Economizer Requirement
1A, 1B, 2A, 3A, 4A, 7,8	No Requirement
2B, 3B, 3C, 4B, 4C, 5B, 5C, 6B	Economizers on All Cooling Systems \geq 65,000 Btu/h
5A, 6A	Economizers on All Cooling Systems \geq 135,000 Btu/h

Table 803.2.6(2) Equipment Efficiency Performance Exception for Economizers

Climate Zones	Cooling Equipment Performance Improvement (EER or COP)
2B	10% Efficiency Improvement
3B	15% Efficiency Improvement
4B	20% Efficiency Improvement

803.3.3.5 Economizers. ~~Economizers shall be provided on each system with a cooling capacity greater than 65,000 Btu/h (19 kW) in accordance with Section 803.2.6.~~ Supply air economizers shall be provided on each cooling system according to Table 803.2.6(1). Economizers shall be capable of operating at 100% outside air, even if additional mechanical cooling is required to meet the cooling load of the building.

Exceptions:

1) ~~Systems utilizing W~~water economizers that are capable of cooling supply air by direct and/or indirect evaporation and providing up to 100 percent of the expected system cooling load at outside air temperatures of 50°F (10°C) dry bulb/45°F (7°C) wet bulb and below.

~~2) Systems under 135,000 Btu/h (40 kW) cooling capacity in Climate Zones 3c, 5b, 7, 13b and 14.~~

2) Where the cooling equipment is covered by the minimum efficiency requirements of Table 803.2.2(1), 803.2.2(2), or 803.3.2(1) and meets or exceeds the minimum EER by the percentages shown in Table 803.2.6(2)

3) Where the cooling equipment is covered by the minimum efficiency requirements of Table 803.3.2(2) and meets or exceeds the minimum integrated part load value (IPLV) by the percentages shown in Table 803.2.6(2)

8) SUPPORTING INFORMATION (State purpose and reason, and provide substantiation to support proposed change):

The proposed requirement maps the current economizer requirements (based on ASHRAE Standard 90.1-1999) to the proposed new IECC climate zones with some modification. The current economizer requirements are based on estimates of cost-effectiveness for air-side economizers. Because much of the costs of including an economizer are related to controls and independent of capacity, more favorable conditions are needed for small systems to be judged cost effective than for large systems, hence the capacity dependency in current requirements and the proposed Table 803.2.6.

The current economizer requirements are based on number of hours between 55 and 69 F, when an economizer could normally be used, adjusted for locations expected to be too humid (based on a 1% design wetbulb measure) to make use of economizers during the cooling season. This was one of the characteristics used in the climate analysis conducted by PNNL

In mapping the current requirements, it was clear that climates zones 7 and 8 typically have too few cooling hours for an economizer to be cost-effective. While the current requirements use the design wetbulb temperature as a proxy for humidity, a thorough review of climate data suggests that it is not a very good proxy for the humidity during the conditions when an economizer normally would be used. For this reason, we have proposed maintaining the spirit of the 90.1-1999 requirements by not requiring economizers in climates zones that are tropical (1A, 1B), hot & humid (2A, 3A), or mixed humid conditions (4A). In both the cold and in these humid climates, the failure of an economizer in an open condition can easily negate the limited savings potential during favorable economizer conditions. For the pacific coastal zones (3C, 4C, 5C), we have suggested requiring economizers on all systems down to 65,000 Btu/h as the number of hours that economizers can be used in these climates makes them extremely cost-effective. This is also seen in the current requirements. For the climate zones classified as dry (2B, 3B, 4B, 5B, and 6B) we have suggested requiring economizers on all systems down to 65,000 Btu/h as the dryness of these climates allows the simplest, lowest cost economizer control strategy to be effective. Climate zones 5A and 6A are characterized by short humid summers coupled with mild swing seasons and cold winters. In these climates, we have suggested that economizers only be required on systems greater than 135,000 Btu/h capacity to reflect the limited usability of the economizer during the summer season and the fact that smaller systems would commonly be installed on small buildings with generally limited cooling during the swing seasons.

The economizer tradeoffs have been provided in terms of percentages above the minimum EER or in the case of chiller systems, the IPLV cooling requirements. This simplifies the application to a broad category of cooling equipment at the expense of requiring a simple calculation to get the allowed EER or IPLV levels for the tradeoff. These tradeoffs are approximately those provided by the existing EER tradeoffs in the current requirements; however they are extendable to the chiller equipment, or condenser systems.

SUPPORTING INFORMATION *Continued* (Attach additional sheets as necessary)

PLEASE USE SEPARATE FORM FOR EACH PROPOSAL
SUBMITTAL AS A DOCUMENT ATTACHMED TO AN E-MAIL IS PREFERRED
(SEE REVERSE FOR DIRECTIONS ON WHERE TO SEND PROPOSALS)