New York State Energy Code Technical Subcommittee

October 11, 2012

Meeting Minutes

Attending:

- Ian Graham(NYC)
- Don Winston(NYC)
- Mark Schwarz (NYC)
- Marshall Kaminer (NYC)
- Todd Stewart
- Mike Burke
- Daniel Farrell
- Scott Kopp
- John Ferraro
- Mike Burnetter, DOS
- Joseph Hill, Chair, DOS

The meeting convened at approximately 9:32 am. Chairman Joseph Hill indicated that a roll call shows a quorum of members present. Chairman Hill stated that today's meeting would focus on commercial provisions of the code.

Discussion continued on the *Additional Energy Efficiency Package* portion of the IECC 2012. These are mandatory provisions, from which Code users must select from *one of three* additional efficiency options, the three categories being, 1.) Efficient HVAC, 2.) Efficient Lighting Systems, or3.) On-Site renewable power Systems. Several Committee members expressed concern with the Efficient HVAC section, in specific, the ability to locate boiler equipment meeting requirements of the Section (Tables 406.2.(4) and (5)). Committee members researched availability of equipment at slightly lower efficiencies, and suggested adjustments to Tables 406.2.(4) and (5). For Table 406.2(5) it was noted that only 11 equipment selections were available at the Code efficiency level of 97%. At 92% AFUE there where is a better selection of available equipment. Additionally noted, at extremely high efficacies, one needs to consider the actual operational (design) temperature, VS. the operating temperature at which the equipment is rated. Example, if a piece of equipment is rated at 97% at an operating temperature of 140 Deg.F, and the actual design operating temperature needs to be 180 Deg.F, there is absolutely no cost benefit in purchasing the equipment at the 97% efficiency level.

A motion was made to accept the changes to Table C406.2(4) as shown below. The motion was seconded and vote was undertaken. The record shall reflect that all Committee members voted in favor of modifications of the Table

TABLE C406.2(4)
WARM AIR FURNACES AND COMBINATION WARM AIR FURNACES/AIR-CONDITIONING UNITS,
WARM AIR DUCT FURNACES AND UNIT HEATERS, EFFICIENCY REQUIREMENTS

EQUIPMENT TYPE	SIZE CATEGORY (INPUT)	SUBCATEGORY OR RATING CONDITION	MINIMUM EFFICIENCY	TEST PROCEDURE
Warm air furnaces, gas fired[a]	< 225,000 Btu/h	(We must decide on which to apply to Zone 4 as both are called out to the right)	~~For Climate Zones 1 and 2 NR~~	DOE 10 CFR Part 430 or ANSI Z21.47
			~~For Climate Zones 3 and 4 90 AFUE or 90 E_t[c]~~	
			For Climate Zones 4 – 6 92 AFUE or 92 E_t[c]	
	≥ 225,000 Btu/h	Maximum capacity	90% E_c[b]	ANSI Z21.47
Warm air furnaces, oil fired[a]	< 225,000 Btu/h	—		DOE 10 CFR Part 430 or UL 727
			For Climate Zones 4-6 85 AFUE or 85 E_t[c]	
	≥ 225,000 Btu/h	Maximum capacity	85% E_t[b]	UL 727
Warm air duct furnaces, gas fired[a]	All capacities	Maximum capacity	90% E_c	ANSI Z83.8
Warm air unit heaters, gas fired	All capacities	Maximum capacity	90% E_c	ANSI Z83.8

Warm air unit heaters, oil fired	All capacities	Maximum capacity	~~90~~ 85% E_c	UL 731

For SI: 1 British thermal unit per hour = 0.2931 W.
E_t = Thermal efficiency. E_c = Combustion efficiency (100 percent less flue losses).

a. Efficient furnace fan: Fossil fuel furnaces in climate zones 4-6 shall have a furnace electricity ratio not greater than 2 percent and shall include a manufacturer's designation of the furnace electricity ratio.
b. Units shall also include an IID (intermittent ignition device), have jacket losses not exceeding 0.75 percent of the input rating, and have either power venting or a flue damper. A vent damper is an acceptable alternative to a flue damper for those furnaces where combustion air is drawn from the conditioned space.
c. Where there are two ratings for units not covered by NAECA (3-phase power or cooling capacity greater than or equal to 65,000 Btu/h [19 kW]), units shall be permitted to comply with either rating.

The group voted on a series of changes to the Minimum Efficiencies in Table C406.2(5) as shown in the mark-up below:

TABLE C406.2(5)
BOILER, EFFICIENCY REQUIREMENTS

EQUIPMENT TYPE	FUEL	SIZE CATEGORY	TEST PROCEEDURE	MINIMUM EFFICIENCY
Steam	Gas	< 300,000 Btu/h	DOE 10 CFR Part 430	80% AFUE
		> 300,000 Btu/h and > 2.5 m Btu/h	DOE 10 CFR Part 431	79% E_t
		>2.5 m Btu/h		80% E_c
	Oil	< 300,000 Btu/h	DOE 10 CFR Part 430	85% AFUE
		> 300,000 Btu/h and > 2.5 m Btu/h	DOE 10 CFR Part 431	82% E_t
		>2.5 m Btu/h		82% E_c
Hot water	Gas	< 300,000 Btu/h	DOE 10 CFR Part 430	~~97~~ 92% AFUE
		> 300,000 Btu/h and > 2.5 m Btu/h	DOE 10 CFR Part 431	~~97~~ 92% E_t
		>2.5 m Btu/h		~~94~~ 92% E_c

	Oil	< 300,000 Btu/h	DOE 10 CFR Part 430	~~90~~ 85% AFUE
		> 300,000 Btu/h and > 2.5 m Btu/h	DOE 10 CFR Part 431	~~88~~ 85% E_t
		>2.5 m Btu/h		~~87~~ 85% E_c

For SI: 1 British thermal unit per hour = 0.2931 W.
E_t = Thermal efficiency. E_c = Combustion efficiency (100 percent less flue losses).

A motion was made to adopt the revised table as noted above, and seconded. The record shall reflect that the vote was unanimous.

Group discussion moved to Efficient Lighting Systems. Joseph Hill requested the group discuss bringing in ASHRAE 90.1-2010 space by space lighting. It was noted that the IECC 2012, in comparison to ASHRAE 90.1, does *not* give additional 1 watt per square foot for decorative lighting allowance for retail, as does ASHRAE 90.1-2010. The Committee turned to discussion of Space-by-space Method of Calculating Interior Lighting Power Allowances, per ASHRAE 90.1-2010 Section 9.6.1 and Tables 9.6.1 and 9.6.2. and additional allowance for Decorative lighting. Is IECC 2012 less stringent than ASHRAE 90.1-2010 on a whole-building basis? Space-by-space of IECC and ASHRAE 90.1-2010 appear to be functionally equivalent.

Mike Burnetter proposed Substitute table on page C-68 (Table C406.3) for Table C 405.5.2(1) C 406.3.1 Reduced lighting power density. Group discussion indicated that the entire ASHRAE lighting section, including lighting controls, (not just the Tables) would need to be brought into the IECC 2012 (New York's modified version) in order to be effective. In bringing the entire ASHRAE lighting section into the NY ENERGY Code, this could present copy write infringement problems.

The discussion was tabled, and would be brought back after lunch.

The group broke for lunch at 12:04

In resuming the commercial provisions discussion, specifically the *Additional Energy Efficiency Package* portion of the IECC 2012 Joseph Hill proposed leaving the lighting option as it is in the IECC 2012 and not has a space-by-space allowance for lighting. A motion was made and seconded. The record will show the following members voted in favor:

Mike Burke

Scott Copp

John Ferraro

Don Winston

Ian Graham

Marshall Kaminer

Mike Burnetter

C403.2.4.3.3 Automatic Start controls

Mike Burnetter proposed modification of IECC 2012 language from Automatic *Start controls*, to *Optimum Start Controls* to reflect language and to be concurrent with ASHRAE 90.1-2010.
All in favor of changing Optimizing Start Controls say aye.

All members voted in favor of the proposed modification.

Ian Graham proposed moving Sections C403.2.6 Energy recovery ventilation systems**,** and C403.2.10.1 Allowable fan floor Horsepower, from the Mandatory provisions, to Prescriptive provisions. Reasons; Mandatory and Prescriptive provisions only have a distinction when the building is designed per the Total Building Performance path. If a building cannot meet the mandatory requirements, the building could not be built, even if it is demonstrated (by total building performance) that the proposed design would use less energy than a code complaint building which incorporates these features into the design.

A show of hands was requested by the Chair; the record reflects that all members voted in favor

Discussion moved to the issue of air side economizers which are missing in the IECC 2012 under Complex HVAC systems. Mr. Hill spoke with the IECC -2012 secretariat, who indicated the requirement "fell through the cracks", and additionally, that this omission will be corrected in the IECC 2015.

Mike Burnetter proposed adding **missing** language for Air economizers in Section C 403.3.1 for Complex HVAC systems. Language would be utilized as currently exists in the ECCCNYS -2010. A motion to accept was made, and seconded, Group will vote on changes to language as shown in the Ch 4 document provided by, with agreed to revisions.
All members voted in favor.

C 403.3.3 Control of HVAC in Group R-1 Sleeping Rooms . A motion was made to include language incorporating HVAC systems controls for Group R-1 sleeping rooms , when rooms are unoccupied.
Motion to include this language carries; Record 5 in favor, 2 opposed, 2 abstain

Section C402.3.1 Maximum area (of glazing) Ian Graham introduced a proposal to strike 30 percent maximum allowable glazing area and amend to 40 percent maximum allowable glazing area concurrent with C407 Total Building Performance and ASHRAE 90.1-2010;
7 votes in favor 1 no vote.

Modifications to NYS application of ASHRAE 90.1 -2010 Provisions

Section 8.4 Mandatory provisions
8.4.1 Voltage drop
8.4.1.1 Feeders
8.4.1.2 Branch Circuits

Ian Graham and Don Winston proposed to move Voltage drop requirements from *Mandatory* to *Prescriptive* provisions. Additionally, Section 11 Energy Cost Budget (ECB) Method, Table 11.3 will be modified to reflect *base building parameters* will include Voltage drop for Feeders and Branch Circuits indicated as mandatory. Appendix G Performance Rating Method (PRM) requirements will be revised accordingly.
The proposal will be voted on in concept and Ian Graham will provide specific language and placement, and as needed provide language regarding trade-offs using performance paths (e.g., ECB and PRM). Also noted, NYC electrical code incorporates NEC fine point note, indicating a maximum which is unaffected by this change.

Motion to approve: 9 votes in favor (unanimous)

At 4:00pm, a motion was made to adjourn, meeting adjourned.