

State Energy Code Technical Subcommittee

October 4, 2012

Meeting Minutes

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

Joseph Hill convened the meeting at approximately 9:15 Am., noting a quorum of Committee members in attendance. Joseph directed discussion to the proposed commercial provisions of the 2012 IECC. Joseph stated in response to a prior question from Don Winston (member) that DOS Counsel has ruled that the Energy Code Subcommittee may propose layering a NYS modification onto ASHRAE 90.1-2010 and that such modification would go in the NYS addendum to the 2012 IECC. This does not create a change to the ASHRAE 90.1 Publication, it changes the way in which New York State enforces the requirements of ASHRAE 90.1.

The discussion moved to water-side economizer exception submitted by Don Winston which would be applicable for alteration to existing buildings. Don stated that often better energy efficiency can be obtained utilizing mechanical cooling rather than an economizer, and that space constraints may prevent use of economizer equipment. Mike Burnetter (DOS) stated that NY and other states are aware that air-side economizer option was left out of the complex HVAC Section of the **2012 IECC** due to an oversight by the IECC Committee.

Language provided by Don Winston was as follows:

Exception: Waterside economizers shall not be required in the case of a central chilled water plant where it can be demonstrated by energy modeling that the total annual energy consumption per unit of cooling (kWh/Ton-hr) is less utilizing mechanical cooling than using economizer.

Total Annual Energy Consumption of a chilled water plant shall include: chillers, chilled water pumps, condenser water pumps, cooling tower fans, condenser water makeup water pumps (or the energy consumed by central domestic water pumps in providing makeup water for cooling towers).

Energy consumption of chillers shall be calculated using the manufacturer's actual rated efficiencies for part load points, utilizing condenser water relief where possible. NPLV and IPLV ratings shall NOT be used.

Don stated after some discussion, he is withdrawing this proposal because this compliance path already exists in **Section 402.1.3 of ASHRAE 90.1-2010**. This change does not affect the need for the air-side economizer option was left out of **2012 IECC**

There was general discussion of feasibility of compliance with **IECC 2012 Section 406 – Additional Efficiency Package Options**. This part of the code is a mandatory requirement. It was noted that in large part, HVAC equipment at the efficiency levels shown in **IECC 2012, Table C406.2 (5) Boiler, Efficiency Requirements** are not readily available in the market. The requirements shown in **IECC 2012 Table C406.2 (6) Chillers –Efficiency Requirements** was generally seen as less problematic. Scott Copp (member) suggested that minimum efficiencies for equipment **Table C406.2 (5)** could be modified to reflect equipment more readily available. For example, efficiency levels for hot water gas boilers under 300,000 Btu/h minimum could point to ENERGY STAR minimum requirements, which is currently 90% AFUE. The group generally agreed that this was the preferred approach, and would consider and vote on inclusion of a table with these revised efficiencies.

Rather than to adopt an Energy Code that would be unusable, the Committee voted to accept slightly lower HVAC equipment Efficiency level for the Additional Efficiency Package options.

It was noted that in general, costs to building owners of generating required percentage of renewable energy through PV or wind generating systems may not be cost-effective in all situations, and further is not feasible in dense urban sitting scenarios.

Discussion shifted to prior consideration of bringing ASHRAE 90.1 lighting power requirements into IECC 2012 commercial provisions, allowing space-by-space lighting power requirements. Joseph Hill asked that the record reflect that straw poll previously conducted showing support for bringing ASHRAE 90.1 lighting power tables into the 2012 IECC had been rescinded based on information provided to the group by professional lighting designers. Decorative lighting allowances (above base code allowances) are less generous in 2012 IECC (than the 90.1 standard) which may present design challenges for retail and hospitality applications.

There was lengthy discussion regarding if the equation under Section C403.2.3.1 Water-cooled centrifugal chilling packages was accurate. It appears to differ from what should be the same equation under footnote f. to **Table C406.2 (6) Chillers –Efficiency Requirements** on page C-67. In addition, a potential issue exists with equations not being provided for SI units vs. IP units. Additionally noted the calculation found in of ASHRAE 90.1-2010 differs from the calculations found in IECC 2012. At a minimum, verifying calculation methodology for water-cooled centrifugal water-chilling packages is warranted. Apparently there are five different calculations in IECC 2012 and ASHRAE 90.1-2010. The Committee felt that advice on this reference will be sought from the industry / manufacturer representative.

Don Winston asked to entertain a motion moving the mandatory provisions of ASHARE 90.1 -2010 for voltage drop from Mandatory to Prescriptive to preserve flexibility in design. Joseph Hill clarified that for any proposal to make a mandatory provision, prescriptive, will need adequate justification. Mike Burnetter stated that NYS Energy Law requires justification of changes as proposed. Ian Graham noted the following would provide the required justification;

The terms *Mandatory* versus *Prescriptive* only have meaning when projects pursue compliance via Section 407 (Total Building Performance). Under other compliance paths (e.g., COMCheck) ALL requirements must be met making them all mandatory. Under Section 407, the performance path, all projects are permitted to demonstrate compliance for a proposed design if its annual energy cost is less than that required based on the annual energy cost of a standard reference design (which section 407 defines). This method allows tradeoffs between less and more efficient design elements and code requirements that are Prescriptive but not for those that are Mandatory. For most buildings voltage drop represents a limited actual benefit for energy savings and for some buildings, such as high rise residential buildings, represents an enormous increase in first cost for the infrastructure to support the voltage drop limit for feeder circuits.

Proposed designs that don't include prescriptive requirements must achieve an equivalent reduction in annual energy cost for the proposed design by improving other elements of the design so the overall energy performance at least meets the minimum that the code requires. This change would make the code more flexible, but does not affect stringency with respect to energy performance. Under the performance path of Section 407, the minimum energy performance is defined by the prescriptive and mandatory requirements. Therefore, a building where prescriptive voltage drop requirements cannot be implemented must still result in overall energy performance that is no worse than the code in total as-written.

Ian Graham (member) stated that an energy modeling option is needed for existing buildings in **IECC 2012 Section C401.2.1 Application to existing buildings.**

The group agreed to consider the justification. At that point, the meeting adjourned at approximately 4:00 pm.