

March 2011

ENGINEERING NEWSLETTER



NC Department of Insurance

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Upcoming Building Code Council Meetings

The next scheduled Building Code Council meetings will be held March 7 and March 8 at the McKimmon Center at 1101 Gorman Street, Raleigh, NC 27606. The schedule for the meetings will be as follows:

March 7, 2011: Work Session 9:00 AM

Public Hearing 1:00 PM on the C items shown on the agenda (including the 2011 NC Electrical Code)

March 8, 2011: Council Meeting 9:00 AM

The agenda can be found at:

<http://www.ncdoi.com/OSFM/Engineering/BCC/Documents/Agendas/1103.pdf>

Design Requirements for Zip Lines

At their October meeting, the NC Board of Examiners for Engineers and Surveyors determined that zip lines and their assemblies must be designed by a Professional Engineer if the zip line will be available for public use. A policy on this issue will be drafted and adopted to further clarify the Board's position. Once that policy is finalized and available, it will be provided in the Engineering Newsletter.

From the Code Enforcement Services Section:

Inclement Weather Notice for Inspector Certification Examinees

If you are experiencing inclement weather or the city where the test center is located is experiencing inclement weather, and you have an exam scheduled, please call 1-877-234-6082. There will be an automated message regarding test center closings due to weather conditions.

Continuing Education Course Sponsor Workshops

The Code Officials Qualification Board now offers a workshop for all sponsors and coordinators of continuing education courses. The purpose of the workshop is to streamline the application process, resulting in more classes being offered and fewer errors in our CE reporting. Please contact Celestine Phill at celestine.phill@ncdoi.gov to attend a future class.

Energy Code Training

North Carolina has had an Energy Conservation Code in effect since 1996. Although the Energy Code requirements were to have been enforced and inspected since that time, inspector training on that code was never added to the standard code courses.

Grant funding has now enabled the department to incorporate the Energy Code training into the Building, Electrical, Mechanical and Plumbing code courses at the various levels. The incorporation of the Energy Code material into the other code training courses will be complete by this summer. Once complete, individuals taking the affected courses will be notified of the change and reminded to bring their Energy conservation code to class.

In keeping with the changes to the standard code courses, Energy Code questions will be added to the state examinations with the exception of the Fire Prevention Code examinations. Again, once the course and exam contents changes have been finalized, an announcement will be made. The energy conservation Code will be added as a reference to the applicable exams (Building, Electrical, Mechanical, and Plumbing). When you sign up for an exam, please remember to check the material sent to you to be sure you bring all the required reference materials to the testing site.

Web Interpretations Posted Since Last Newsletter

The following interpretation has been posted since the last Newsletter edition. You can find interpretations on the Engineering Website located at http://www.ncdoi.com/OSFM/Engineering/CodeServices/engineering_codeservices_interpretations_search3.asp

2009 Electrical Code Web Interpretation

Sections 700.20, 1006.3, 2701.1: Motion Detector Switched Means of Egress Emergency Illumination

New ICC Swimming Pool and Spa Code

The ICC Swimming Pool Code Drafting Committee (SPCDC) has completed its work on the draft of the International Pool and Spa Code. Public Version 1.0 is posted at <http://www.iccsafe.org/cs/ISPSC/Pages/default.aspx> . Public comments are now being accepted.

The purpose of this code is to provide minimum standards to safeguard life or limb, health, property and public welfare by regulating the design, construction, and installation, quality of materials, location, operation, and maintenance or use of aquatic vessels. What is the definition of an “aquatic vessel”?

Aquatic Vessel: Any vessel, permanent or temporary, intended for swimming, bathing, or wading.

For purposes of this code, the term is used broadly to capture all types of manmade wet locations where human occupancy is intended or anticipated. This can be in a residential application or in a public application. Examples of aquatic vessels include swimming pools, spas, and hot tubs.

Effective Dates for the 2012 Codes and 2011 NC Electrical Code

NC Code	Effective Date	Mandatory Effective Date**
2011 Electrical	TBD	TBD
2012 Building	9/1/2011	3/1/2012
2012 Fire	9/1/2011	3/1/2012
2012 Fuel Gas	9/1/2011	3/1/2012
2012 Mechanical	9/1/2011	3/1/2012
2012 Plumbing	9/1/2011	3/1/2012
2012 Administration	No Technical Changes	
2012 Energy Conservation	TBD	TBD
2012 Residential	TBD	TBD

** For Code Enforcement Official Certification testing purposes, exams will transition to the 2012 NC State Building Codes and 2011 National Electrical Code on the mandatory effective date for each trade.

Introducing Quick Drills: Code Review

The OSFM Research and Program Development Section is producing a new web tool called Quick Drills: Code Review. The Quick Drills are designed to be interactive training snippets for the fire and rescue community while the Code Reviews are intended for use by code officials.

You will find these at http://www.ncdoi.com/OSFM/RPD/PT/quick_drills_codereview.asp .

If you have any questions about these documents, contact Dan Austin at Dan.Austin@ncdoi.gov

New Interpretation: Lavatories with Enhanced Reach Ranges Required for Nursery, Daycare, and K-3rd Grades

Effective immediately, the following interpretation is in effect. This interpretation, which has no scoping provisions in the NC Building code, uses an ANSI technical requirement pertaining to lavatories for persons with limited reach ranges.

2003 ANSI 606.5 Lavatories with Enhanced Reach Ranges is now applicable for daycare, nursery and K-3rd grades. This section addresses the location of reach range of lavatory controls (faucets) and soap dispensers, requiring them to have either:

1. A maximum reach depth of 11 inches from the approach edge of the lavatory, or
2. If automatic, to be activated within a reach depth of 11 inches maximum.

The water and soap flow shall be provided with a reach depth of 11 inches maximum as well.

Although the lavatories provided for children are often lower than those for adults, this requirement serves children of younger ages who do have a limited reach range. Access may be provided from the side as well as from the front.

This means that lavatories for 3rd grade and below will have to be checked to determine whether or not the fixture will comply with the ANSI 606.5 requirement. The policy applies to all lavatories for children in this age range (daycare, nursery and K-3rd grades), not just the accessible lavatories.

The language in the ANSI Commentary (below in **Rust**) describes it in slightly more detail:



606.5 Lavatories with Enhanced Reach Range.

Where enhanced reach range is required at lavatories, faucets and soap dispenser controls shall have a reach depth of 11 inches (280 mm) maximum or, if automatic, shall be activated within a reach depth of 11 inches (280 mm) maximum. Water and soap flow shall be provided with a reach depth of 11 inches (280 mm) maximum.

EXCEPTION: In Type A and Type B units, reach range for lavatory faucets and soap dispensers is not required.

This standard requires enhanced reach range for lavatory faucets and soap dispensers when required by the authority having jurisdiction. When required, the faucets and soap dispenser must be located on the side of the lavatory

[i.e., 11 inches (280 mm) maximum from the front edge of the counter] rather than at the back of the lavatory or on the back wall. This is beneficial for persons who are short in stature or have limited reach over the 34 inch (865 mm) lavatory or counter (see commentary Figure C606.5). Alternatively, access could be provided from the side of the lavatory as well as from the front. The exception recognizes that this requirement was not intended to be scoped in Type A and Type B dwelling units.

Where the accessible and enhanced reach range lavatories are separate fixtures, accessible lavatories (i.e., without enhanced reach range requirements) must have faucets and soap dispenser controls that meet the general operable parts requirements in Section 309.

Question? Contact Laurel Wright at laurel.wright@ncdoi.gov

NC Energy Conservation Code Status Update

Introduction:

North Carolina received a contract from the U.S. Department of Energy with a target that the state would develop an energy code that is 30% more energy efficient than the 2006 International Energy Conservation Code (IECC). Appalachian State University and Mathis Consulting (The Project Team) used the 2009 IECC as the base document as a beginning point to move forward proposals to that end. After conducting a large number of energy modeling runs and economic analyses, the Project Team recommended a package of improvements to the NC Building Code Council ad hoc committees. The committees debated many of the provisions and moved forward recommendations to the NC Building Code Council.

Because of significant opposition expressed in the final hours, the stringency of the residential energy provisions were reduced through compromise to be approximately 15% more energy efficient than the 2006 IECC, which is representative of the efficiency improvement that would be realized by adoption of the 2009 IECC. The 30% improvement recommendations for the commercial provisions remained intact. To put the above in context with our current 2009 NC Energy Code, one must understand that our 2009 NC Energy Code is modeled from the 2006 IECC. And that the 15% energy efficiency improvement realized from the 2006 IECC to the 2009 IECC is representative of the improvement from moving from the 2009 NC Energy Code to the 2009 IECC.

The NC Home Builders Association introduced a package of proposed residential code changes at the December, 2010 NC BCC meeting that they wish approved as a condition for not opposing the proposed energy code in the legislature. These proposals were identified by the home builders as trade offsets for the increased first cost of new home construction due to the new energy code provisions. These proposals will be evaluated through the normal code development process.

Because the residential energy code provisions were scaled back, a voluntary appendix was created to recapture the original proposed residential energy code provisions. Implementation of the measures in the appendix is strictly voluntary at the option of the permit holder. Incentives could be put into place in the future to encourage its use. The purpose of the appendix is to provide guidance for achieving additional residential energy efficiency improvements that have been evaluated to be those that are most cost effective for achieving an additional 15-20% improvement in energy efficiency beyond the code minimums.

The above is an overview of the path taken to arrive at the NC Energy Conservation Code package of improvements approved by the NC Building Code Council at their December, 2010 council meeting. Below is a summary of key changes to the mandatory residential and commercial energy code provisions.

Residential Code Changes:

1. Increased the home thermal envelope requirements (i.e., walls, ceilings, and floors) to meet or exceed the 2009 IECC requirements. Some values in the prescriptive envelope tables are the same as the 2009 IECC while other values exceed requirements of the 2009 IECC.
2. Increased the fenestration requirements to meet or exceed the 2009 IECC requirements. Some values in the prescriptive envelope tables are the same as the 2009 IECC while other values exceed requirements of the 2009 IECC.

3. Enhanced the requirements from the 2009 IECC to improve and clarify air sealing, air barrier installation, and insulation installation to aid code compliance and enforcement and improve building performance.
4. Required HVAC system duct leakage testing. Allowed leakage is more stringent than the 2009 IECC. This testing is not required in our current energy code.
5. Enhanced the air sealing requirements of the 2009 IECC when leak testing the building thermal envelope. Allowed leakage using the option for the home blower door testing is more stringent than the 2009 IECC. This testing is not contained in our current energy code.
6. Added detailed air sealing drawings to the appendices to aid code compliance and enforcement. Also, work sheets were added to the appendices to aid compliance with HVAC duct leakage testing and home blower door testing.
7. Equipment efficiencies are required to meet current NAECA minimum standards. Improvements in equipment efficiencies are consistent with the 2009 IECC.
8. Amended the insulation/fenestration information card to indicate how building thermal envelope air sealing was demonstrated and to also indicate the results from the HVAC duct leakage testing.
9. Required a minimum of 75% of lamps in permanently installed lighting fixtures to be high-efficacy lamps. This exceeds the 50% requirement contained in the 2009 IECC. We have no lamp efficacy requirements in our current 2009 NC residential energy code provisions.

Commercial Code Changes:

1. Improved the building thermal envelope requirements to the values proposed for approval in ASHRAE 90.1-2010. These values increase energy efficiency beyond that contained in the 2009 IECC for these measures.
2. Improved the lighting power density requirements to the values proposed for the 2012 IECC. These requirements increase energy efficiency beyond that contained in the 2009 IECC for these measures.
3. Added requirements for automatic lighting occupancy controls in certain spaces: Classrooms, conference/meeting rooms, employee lunch and break rooms, private offices, storage rooms greater than 100 square feet in floor area, and computer rooms greater than 100 square feet in floor area.
4. Added requirements for demand control ventilation for HVAC systems beyond that required in the 2009 IECC.
5. Equipment minimum efficiency requirements were updated to more stringent values consistent with the IECC 2009 requirements.
6. Added a requirement for at least one of the following at the permit holder's option:
 - a. More efficient mechanical equipment
 - b. Reduced lighting power density
 - c. Energy recovery ventilation system
 - d. Higher efficiency service water heating
 - e. On-site supply of renewable energy
 - f. Automatic day lighting control system

7. Increased HVAC system completion requirements to verify proper installation, balancing, function, and operation of HVAC systems including system to system interfacing relationships to the extent reasonably feasible.

8. Added detailed air sealing drawings to the appendices to aid code compliance and enforcement.

Current Status of the Energy Code

The planned effective date of both the 2012 NC Energy Conservation Code and the Residential Code energy provisions is January 1, 2012 with phase out of allowed use of current provisions on March 1, 2012. There have been 10-letters of request for Legislative review of both Codes. This may delay the effective date for the 2012 NC Energy Conservation and Residential Codes to as late as January 1, 2013.

From the Evaluation Services Section

There have been no new White Papers or Evaluations posted since the previous newsletter edition. However, several are in the final review phase and should be posted soon. There are currently 33 topics on the board for research and evaluation, including 13 being researched and drafted at this time. The links to the completed documents are:

http://www.ncdoi.com/OSFM/Engineering/engineering_evaluations.asp

http://www.ncdoi.com/OSFM/Engineering/engineering_wpt.asp

Feedback

Your feedback is always welcome. If you have comments, questions or suggestions concerning the newsletter or how the Engineering Division can better serve you, please let us know.

You can forward your input by replying to the email you received that contained the link to this newsletter.