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Introduction

After a nearly one-year hiatus, we are happy to have a newsletter in production again. During this past year, the Engineering and Codes Section has seen a number of changes. Our department has seen a new Senior Deputy Commissioner, observed a number of people retire or leave for better opportunities, our first reduction in force in recent years, and a re-alignment of the individual sections. The previous re-alignment was in 2009 after the removal of the State Property Plan Review responsibilities.

After four years and 14 reports, the evaluation services section responsible for research reports has been disbanded. During the next few months, the existing reports will be converted into interpretations.

As we transition into a new, more streamlined department, our focus continues to be on customer service and education. The next large opportunity to show this is at the Council of Code Officials (COCO) quadrennial meeting in Wilmington in the first week of August. We look forward to seeing everyone at there.

Feature Articles

Building Code Councils Votes for Six-year Code Cycle

At the Tuesday, March 11th Quarterly Building Code Council Meeting, the Building Code Council approved a policy to adopt a six-year code cycle for all code except the electrical code. . This includes the Building, Fire Prevention, Plumbing, Mechanical, Fuel Gas, and Energy Codes. The March meeting minutes will be published approximately one-month prior to the June 10th quarterly meeting. Although not identified yet, the next revision to the codes is speculated for 2019, consistent with the language in Session Law 2013-118 which addresses NC Residential Code Cycle.

Based on the information given to staff, the following codes are expected with the respective dates:

2015 Existing Building Code

2015 NC Electrical Code (Based on the 2014 NEC)

2019 – Remaining codes.

Amendments to Building Code

As mentioned in the first article, the Commercial and Residential Building codes (except Electrical) are changing to a 6-year cycle. As in the past, this does not stop changes to the present building code. NC Administrative Code 102.1 has the general procedure to petition for rule-making. An individual can follow these procedures, and, if accepted by the NC Building Code Council and Rules Review, be made available for use. The accepted amendment will have an effective date assigned per NC Admin 102.4, and it will be available for prior use according to the provisions of **NC Admin. 102.5 Interim use of approved rules.**

As of this writing, there are 75 pages of amendments placed free for print on the website. The changes are arranged, where practical, as one page per amendment. This is intended to allow code users to print out the document or selected partial document and then place it into the code book as a supplement. This document can be updated quarterly. In this age of Twitter, please remember that you may get instant notice of a NC Building Code Council vote, but the amendment still has to go through Rules Review to be made official; and the results of that review are not made public until the following quarterly Building Code Council Meeting. The results are promulgated to the NC DOI Website, at the following hyperlink:

[http://www.ncdoi.com/OSFM/Engineering_and_Codes/Default.aspx?field1=Codes -
_Current_and_Past&user=State_Building_Codes](http://www.ncdoi.com/OSFM/Engineering_and_Codes/Default.aspx?field1=Codes_-_Current_and_Past&user=State_Building_Codes)

Scroll down to the document titled **2012 – 2015 Approved Cumulative Amendments.pdf**. If the user clicks this .pdf file, the document will open for your review and use.

Consolidation of Q-Board and Home Inspections Director Position

A portion of Engineering Division staff has recently been reorganized under a new section as part of ongoing efforts to streamline operations, improve service and efficiency, and reduce overall costs.. Mike Hejduk, PE, who previously served as the Director for the NC Home Inspector Licensure Board, will become director of the Qualification Assurance Section (QAS), which is a combination of both NC Home Inspector Licensure Board and the NC Code Official Qualification board.

The two boards share four functional responsibilities common to occupational regulatory agencies:

Certification/Licensing; Pre- and Post- licensing Education; Complaint Investigation, and Disciplinary Action. The past few years have seen successful implementation of internet based activities including Certificate/License application; Continuing Education (CE) rosters submission, and; automated renewals and payments. These online service have resulted in improved service to inspectors and an overall reduction of paperwork and mailing costs. Increased automation also facilitates doing more with less.

In addition, recent legislative changes have introduced requirements for the licensure of pyrotechnic display operators, assistants and employees. Licensing and education staff for this occupation is being included in this new section as well.

Given the above changes, Code Enforcement Officials (CEOs), Licensed Home Inspectors and Pyrotechnic Operators, may hear some new voices on the other end of the phone. Look for additional outreach information via email from our certification and education staff to include an update on switching vendors for Standard Certificate exam testing and administration from Pearson-Vue to PSI beginning July 1, 2014. Also keep an eye out for a lower cost of exams.

Department Notes

Engineering Department

Lien Law

The “new” lien law passed its one-year anniversary on April 1, 2014. As previously discussed, it is not a code item, but the code official is involved to a certain extent since the owner is required (subject to the Law’s language) to provide the pertinent information to the inspection department during the permit application. [Information on this new law can be found at www.liensnc.com](http://www.liensnc.com)

New Code Interpretations Posted

Since the last Engineering Newsletter was posted, the following web interpretations have been posted to the interpretations webpage, at the following link:

http://www.ncdoi.com/OSFM/Engineering_and_Codes/Default.aspx?field1=Code_Interpretations&user=State_Building_Codes

NC Administrative Code and Policies

106.1 - Permit Requirements for Piers Docks Bulkheads on Residential Property

NC Building Code

0101.2 - Roadside Produce Stands Exempt from the Building Code

0300 - Occupancy Classification Examples

0713.3 - Wall Penetrations for Type IA IB IIA IIIA IIIB IV VA Construction Rev1

1004.1.1 - Occupant Loading

NC Energy Conservation Code

502.1.1 - Continuous Insulation

503.2.9.3 - Statement of Compliance

NC Plumbing Code

0101.3 - Intent and Enforceability in the Plumbing Code

0101.6 - Public Utility Contractors Installing Building Sewer and Water Service

0403.1 - Location of Facilities for Churches

0403.9.4 - Press Box Toilets

0405.3.1 - Lavatory Sidewall Clearance Residential

0406.3 - Clothes Washer Drain Size

NC Residential Code

0101.2 Permit Requirements for Piers Docks Bulkheads on Residential Property

0307.1 - Lavatory Sidewall Clearance Residential

402.2.12 - Rim Joists Between Floors

1102.2.12 - Rim Joists Between Floors

Training

It has been a busy winter of receiving, participating in or supporting the NC Building Inspector's Association, NC Plumbing Inspector's Association, the NC Mechanical Inspector's Association and the NC Ellis Cannady Chapter of IAIEI, and the NC Fire Marshals Association. Spring and summer continuing education courses are still available for some trades. Refer to the individual association websites, or the NC Qualifications Training Site at : [https://apps.ncdoi.net/f?p=114:505%20:0:::~:](https://apps.ncdoi.net/f?p=114:505%20:0:::). We hope you find a class that suits your professional needs. Remember, the standard courses--Level I, II, and III--can be used for CE once every three years for code enforcement officials, and are available to the general public.

http://www.ncdoi.com/OSFM/Engineering_and_Codes.aspx#News

Refer to links in the red box labeled "Outside Resources" once the preceding link is activated.

A one-time special course is being offered by NFPA through the Department of Agriculture. Code officials who hold a fire inspector certificate are the target audience for this course. Please refer to the application form at the end of this document, in Attachment A. This course has not been submitted to the Q-Board for CE credits, but may still aid the professional development of attendees.

The North Carolina Council of Code Officials (COCO) is pleased to announce the 10th quadrennial Education Research Conference. The announcement and application are available at the end of this document, under Attachment B.

Other

Carl Martin has scanned and cleaned up another previous code cycle: The **1968 NCRC with Revisions through 1985**, and made it available for use as an on-line reference for design professionals, code officials, or anyone accessing the site. There are many informative and illustrative sketches in this code book that help illustrate topics that are current even today. These previous codes are useful for design professionals, building owners, and code officials to identify the code-required building components required at the time of construction or renovation. Our staff has on occasion used it to illustrate proper locations of slab insulation, for example.

Code Qualifications Board Department

As mentioned in the Feature article section, the Code Qualifications Board Director position has been consolidated with the Home Inspector Licensure Department Director position.

Evaluations Services

Since the previous Engineering Newsletter was last published, the Evaluations Services group has been disbanded. Due to a combination of retirements, layoffs and more pressing needs elsewhere, the two remaining people from this group have been reassigned. Billy Hinton has been assigned to the Chief Energy Code Consultant's position, and Bob Speed has been assigned to the Research and Product Development.

Engineer's Corner

Weather Data

With winter officially behind us, we can reflect on the way that really cold weather, can humble some seemingly well-thought-out designs. For better or for worse, humans can have a short memory. When that condensing furnace is being installed during the middle of the summer in a 130°F attic, freezing temperatures may be the furthest thing from the mind of the installer or the designer. However, as we were reminded this past winter, even in North Carolina cold snaps occur that will expose an oversight in design or installation. As many a disappointed and irate homeowner have communicated to us, there were many failures. And further disappointing them, our staff had to inform them that there is not a specific code section to address a design package that makes a condensing furnace freeze-resistant throughout its lifespan. The manufacturer's installation instructions and good design principles apply. Some manufacturer's provide very detailed instructions on how to install their appliances in areas subject to freezing, and therefore the code requires those instructions to be followed. Other manufacturer's are less clear, but instead leave the means of providing freeze protection to the installer and designer.

It is basically common knowledge that designers do not use the extreme low or high weather conditions for sizing the heating or cooling system for climate control in a normal building. Using the extreme highs or lows will lead to operational problems with cooling and heating systems in general. It is also understood that when exterior conditions are more extreme than the design, there will not be as great of temperature control within the building.

This same concept does not apply to the design of systems that will knowingly be exposed to freezing temperatures that will damage the systems. The heat source for a building is not intended to shut down when freezing temperatures occur below the 97.5% or 99% outdoor design temperature, nor sprinkler systems become inoperative. Where is temperature data gathered for freeze protection design? A good source of weather data is compiled right here in NC, at the National Climatic Data Center. It is located in Asheville and it is the repository of historical weather data from numerous stations all over the state and world. The weather data can be obtained by going to their website, and much data is available for free or nominal fees.

Here is an excerpt from the site:

NOAA's National Climatic Data Center (NCDC), located in Asheville, North Carolina, maintains the world's largest climate data archive and provides climatological services and data to every sector of the United States economy and to users worldwide. Records in the archive range from paleoclimatology data to centuries-old journals to data less than an hour old. The Center's mission is to preserve these data and make them available to the public, business, industry, government, and researchers.

A popular CD for designers is the **Engineering Weather Data** CD, which replaces the old Air Force Manual that was commonly used for its Bin Data. With the advent of easily obtainable 8760 modeling software, Bin Data is not as commonly used anymore, but it is still useful to see the quantity of times a given area has seen a given temperature. There are many, many other documents and downloads that a user can select that go beyond the data typically used for sizing HVAC equipment. The site can be daunting at first, but becomes easier with repeated use.

Please keep the winter season in mind during the summer, - and vice-versa-, and pay heed to the manufacturer's installation instructions, and consider using the National Climatic Data Center as a source of temperature data you cannot locate elsewhere.

LP-Gas Code (NFPA 58) Seminar For North Carolina Inspectors

This is the official announcement of the LP-Gas code seminar to be led by Denise Beach of the National Fire Protection Association for state, county, and city inspectors concerned with LP-Gas issues.

The seminar will be held from 8:30 am to 4:00 pm on Tuesday, May 20, 2014, at the Governor James Martin Building at the NC State Fairgrounds, Raleigh, NC. This is best reached from Trinity Road through Gate 9. Directions are below. You may contact me, Richard Fredenburg, LP-Gas Engineer, at 919-707-3231 for details.

Keep this page for information and directions to the training. Send in registration page to enroll for the seminar. You may mail, fax, or email your registration. You must send in a separate registration page for each attendee. No Internet registrations are available. A detailed description of the seminar is also included. Each participant will get a free copy of the LP-Gas Code.

The seminar is offered by NFPA free to inspectors because we reference the LP-Gas Code in our state law. We are able to use the building at no cost. Unlike past training, we will not be providing lunch or break snacks. There are a number of eating places a short drive away, including Wendy's, Backyard Bistro, Arby's, Burger King, and Applebee's. We'll try to have a listing for you. You may bring your own lunch and snacks.

The seminar is limited to about 40 participants, with 9 of those places reserved for our staff. The other 31 or so places are on a first-come-first-served basis. This is being offered to inspectors state-wide. The first ones who send in their registration form will be the first ones registered. All registrations must be received by Tuesday, May 13th, 2014.

Registrations received after the seminar limit is reached will go into a waiting list unless you specify that you do not want to go onto that list.

All of those who send a registration form will receive a confirmation of receipt of your registration and if you are confirmed in the seminar or on the waiting list. Please provide an e-mail address (preferred) or a phone number to notify you of your status. Those moved from the waiting list to the confirmed-in-seminar list will receive a message when that transfer is made. Those still on the waiting list after May 13 will receive another message by Thursday, May 15 stating that they are not confirmed in the seminar.

Directions: Please use the directions on the NC State Fair website, www.ncstatefiar.org/directions.htm. These are more accurate than I could write. The building we are using is referred to as the Martin Building in these directions.

NFPA 58: Liquefied Petroleum Gas Code Seminar

This 1-day program covers design, material and component properties, installation criteria for gas piping systems, gas utilizing equipment, and venting systems. Participants will also learn about new and revised requirements reflecting the latest developments and safety practices in the field and how to incorporate them on the job.

Course Introduction and General Knowledge

- Organization of *NFPA 58*
- Definition of key terms
- Properties of propane gas and weight-volume conversion tables for water and propane capacities for both DOT cylinders and ASME tanks

Equipment and System Installation

- Understand the design, material and component properties, installation criteria, and testing procedures for LP-Gas equipment, piping and installation of systems
- Understand how to locate fixed propane containers outdoors with respect to buildings,
- Be able to locate and apply information related to *NFPA 70, National Electrical Code® (NEC®)* with respect to hazardous atmosphere Classes, Divisions, and Groups pertinent to *NFPA 58*

Transfer and Storage

- Understand the criteria for transfer of LP-Gas and Storage of LP-Gas containers
- Be able to locate and apply information related to the design, requirements, placement, transfer, and storage of LP-Gas and the applicable containers.

Vehicular Transportation

- Understand the requirements of LP-Gas transportation and other relative issues including parking, garaging, and servicing of LP-Gas transporting vehicles
- Understand the relationship of DOT regulations in regard to *NFPA 58*
- Identify the vehicle regulations when shipping LP-Gas in bulk.

Special Buildings

- Identify the structural requirements for a special building used as a storage or dispensing facility
- Learn the construction features required for special buildings
- Identify the ventilation guidelines
- Identify the restrictions on heating the facility

REGISTRATION FORM

LP-GAS CODE (NFPA 58) SEMINAR, 2014 EDITION

Tuesday, May 20, 2014 Governor James Martin Building

NC State Fairgrounds, Raleigh, NC

I wish to register for the *LP-Gas Code* seminar. (One person per form) (PRINT CLEARLY)

Name: _____

Agency: _____

Position: _____

Telephone #: _____ FAX #: _____

E-mail address: _____

Address: _____

City: _____, NC Zip: _____

Do NOT put me on a waiting list. (Check if you do not wish to be placed on waiting list.)

There is no charge for this training. No meal or snacks will be provided.

NCDA&CS, Standards Division email: standards@ncagr.gov

Attention: Richard Fredenburg

1050 Mail Service Center

FAX: 919-715-0524

Raleigh, NC 27699-1050

For NCDA&CS use only

Date received: _____ Registrant #: _____

Confirmed in seminar On waiting list Removed from waiting list

Notified of confirmed in seminar Notified of being on waiting list

North Carolina Council of Code Officials Educational Research Conference Announcement

TO: Building, Electrical, Mechanical, Plumbing and Fire Inspector Association Members, Associate Members, Guests and Others Interested in Code Enforcement

**FROM: Jim Lawson, President, Council of Code Officials
Jeff Britt, President, NC Building Inspectors Assoc., Inc.
Cory Tate, President, NC Ellis Cannady Chapter, IAEI
Danny Bryan, President, NC Mechanical Inspectors Association
Michael Crofts, President, NC Plumbing Inspectors Association
Jerry Coble, President, NC Fire Marshals Association**

**SUBJECT: NORTH CAROLINA COUNCIL OF CODE OFFICIALS
10TH QUADRENNIAL EDUCATIONAL RESEARCH CONFERENCE
AUGUST 3-6, 2014
HILTON WILMINGTON RIVERSIDE, NORTH CAROLINA**

The Board of Directors for the North Carolina Council of Code Officials is pleased to announce plans for the 10th Quadrennial Education Research Conference in Wilmington, NC.

Inspectors attending this Conference will be able to obtain continuing education credits for the workshops they attend. This Conference will include code workshops and discussion with individuals who are recognized as authorities in their fields. There will be sessions relating to NC Existing Building Code, Law & Administration, Appendix E Calculations in the NC Plumbing Code, Solar PV Systems, Gas Pipe Sizing 2014 and Gas Venting 2014 plus a Code Panel of experts who will address questions on code questions, interpretations, legislation, etc. Please see the attached Registration Form to sign up for the discipline for which you would like to receive continuing education credits.

This year's registration fee is \$200.00 for inspectors and spouse/companions and an additional \$20 per child 6 years of age or older (5 years and under are free). Retirees' registration fee will be \$100 for retired inspector and spouse/companion. The registration fee for the inspectors includes a Sunday night get acquainted party, a Monday Exhibitor Showcase luncheon, the banquet on Tuesday night and all breaks.

PRE-REGISTRATION AND PAYMENT IS REQUESTED. THE DEADLINE FOR PRE-REGISTRATION IS JULY 18, 2014. AFTER JULY 18, THE REGISTRATION FEES WILL INCREASE TO \$225 AS SHOWN ON THE ATTACHED REGISTRATION FORM. REGISTRATION FEES ARE NOT REQUIRED TO PRE-REGISTER. HOWEVER, IT WILL BE LESS EXPENSIVE AND IT WILL ALSO HELP YOUR PLANNING COMMITTEE TO PLAN FOR MEAL FUNCTIONS AND ACCOMMODATIONS.

The Hilton Wilmington Riverside is holding a block of 125 rooms until Wednesday July 2, 2014, after which no reservations will be accepted at the special group rate. Room rates are \$141 plus taxes for single or double occupancy. The \$141 room rate includes your parking at the Hilton each day. This room rate is available for 3 days before and after conference dates. RESERVATIONS MUST BE MADE DIRECTLY WITH THE HOTEL AT www.wilmingtonhilton.com or by contacting the hotel at (910) 763-5900. Our group code is OUN. Make sure you mention you are attending the NC Council of Code Officials meeting.

As always, companions and children are cordially invited and encouraged to attend. A copy of the proposed program for the companions/spouses is attached. Please make sure they see the proposed program so they will know what is in store for them when they come to Wilmington.

Also included in this year's program will be an Exhibitors' Showcase luncheon on Monday, August 4. Exhibitors and suppliers will be able to "purchase" display tables for \$350 to display their supplies and materials of interest to inspectors and companions on Monday. If any of you know of an exhibitor who would

be interested in buying a table for \$350, please share the attached Exhibitor Registration Form with them. Door prizes will be given away throughout the conference.

The Board of Directors of COCO and the Presidents of all the Inspector Associations look forward to seeing everyone in Wilmington.

**NORTH CAROLINA COUNCIL OF CODE OFFICIALS
REGISTRATION FORM
AUGUST 3-6, 2014
HILTON WILMINGTON RIVERSIDE - WILMINGTON, NORTH CAROLINA**

Name _____

Jurisdiction or Company _____

Mailing Address _____ City _____ State _____ Zip _____

Telephone Number _____

Companion's Name (if attending) _____

Children's Name(s) and Age(s) (if attending) _____

- Registration fee of \$200.00 paid by July 18 enclosed. (Includes Inspector and Spouse)
 Additional \$20 per child age 6 years and older, (children 5 and under are free)

- Late registration fee of \$225.00 paid after July 18 enclosed.*

- Retiree registration fee of \$100.00 enclosed. (Includes retiree and spouse)

Are you planning to attend Sunday night Get-Acquainted Party?

- No Yes How many persons attending? _____ (ages 6 and above)
 Children 5 and under _____

Are you planning to attend Exhibitor Showcase on Monday for lunch?

- No Yes How many persons attending? _____ (ages 6 and above)
 Children 5 and under _____

Are you planning to attend the Banquet on Tuesday night?

- No Yes How many persons attending? _____ (ages 6 and above)
 Children 5 and under _____

Are you planning to attend the Companion's Breakfast on Tuesday morning?

- No Yes How many persons attending? _____ (ages 6 and above)
 Children 5 and under _____

A Kid's Meal will be available for children 5 years old and under. Please indicate if you prefer a kid's meal for your child/children 5 years old and under.

Continuing Education Sessions:

NOTE: Please provide your certificate number for the area you select each day and provide your ID number below:

Qualification Board ID #: _____

Monday: August 4, 2014

Introduction to the 2015 NC Existing Building Code – 9:45 a.m. – 11:45 a.m.

(Please select ONE area for CE credit)–(2 hours) Need your certificate number

Building: _____ Electrical: _____ Fire: _____ Mechanical: _____ Plumbing: _____

Tuesday: August 5, 2014:

Law and Administration – 8:00 a.m. – 3:15 p.m.

(Please select ONE area for CE credit)–(6 hours) Need your certificate number

Building: _____ Electrical: _____ Fire: _____ Mechanical: _____ Plumbing: _____

8:00 a.m. – 3:15 p.m.

Applying the 2015 NC Existing Building Code to Residential Property (CS2907)

Applying the 2015 NC Existing Building Code to Commercial Property (CS2908)

Applying the 2015 NC Existing Building Code to the Commercial Plan Review (CS2909)

(Please select ONE area for CE credit) (6 Hours) Need your certificate number

Building: _____ Fire: _____

8:00 a.m. – 3:15 p.m.

Reviewing Plans With Check List & Field Installations for Code Compliance (CS2919)

Reviewing Plans With Check List & Field Installations for Code Compliance (CS2920)

Appendix E Calculations in the NC Plumbing Code

(CS2928)

Plumbing: _____ (6 hours) Need your certificate number

8:00 a.m. – 3:15 p.m.

Solar PV Systems and the 2014 NEC

Electrical: _____ (6 hours) Need your certificate number

8:00 a.m. – 3:15 a.m.

Gas Pipe Sizing – 2014 (CS2916)

Flexible Duct & Residential Metal Duct Insulation Installation - 2014 (CS2935)

Gas Venting – 2014 (CS2942)

Mechanical: _____ (6 hours) Need your certificate number

Wednesday: August 6, 2014:

Code Panel - 10:00 a.m. – 12:00 noon

(CE Credits for Building, Electrical, Fire, Plumbing or Mechanical)

(Please select ONE area for CE credit) (2 hours) Need your certificate number

Building: _____ Electrical: _____ Fire: _____ Mechanical: _____ Plumbing: _____

Amount Enclosed \$ _____ Registration Fee

**TOTAL \$ _____ MAKE CHECKS PAYABLE TO COCO
AND MAIL TO: Council of Code Officials
Attention: Jean Williams
1202 Mail Service Center
Raleigh, NC 27699-1202**

**Jean.williams@ncdoi.gov
919-661-5880 ext. 260**