

**BEFORE THE NORTH CAROLINA BUILDING CODE COUNCIL
RALEIGH, NORTH CAROLINA**

Docket No. 2020-2

**IN THE MATTER OF AN APPEAL
BY DANNY G. GOUGH**

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ORDER

THIS MATTER was heard on August 19, 2020 by the North Carolina Building Code Council (“Council”) in Raleigh, North Carolina on the appeal of Danny G. Gough of a December 16, 2019 formal interpretation by Chief Code Consultant Carl Martin.

The hearing was properly noticed. A majority of the Building Code Committee of the Council (as constituted per N.C.G.S. § 143-136(d)) (hereinafter, the “Commercial Super-Committee”) and a majority of the Residential Code for One- and Two-Family Dwellings Committee of the Council (as constituted per N.C.G.S. § 143-136(c)) (hereinafter, the “Residential Super-Committee”) were present, and a quorum of the Council was also present. The Petitioner and Respondent stipulated in writing to allow certain members of the Council to participate in the hearing by remote means due to the ongoing COVID-19 pandemic. The Petitioner, Mr. Gough, represented himself. The Respondent, North Carolina Department of Insurance (“NC DOI”), was represented at the hearing by Special Deputy Attorney General Daniel S. Johnson and Assistant Attorney General James R. Baker. The Council heard sworn testimony from Mr. Gough and Mr. Martin.

FINDINGS OF FACT

Based on the competent evidence in the record, the arguments of the parties, the documents, manuals, and drawings introduced by the parties at the hearing, and the record as a whole, the Council makes the following findings of fact:

1. That on December 3, 2019, Danny G. Gough submitted to NC DOI a request for a formal interpretation by NC DOI.

2. That the December 3, 2019 request for a formal interpretation stated in part:

This appeal seeks clarification of one and only one issue embodied in the requirement of Section 312.1 in the 2012 NCMC, specific to Section 3-4 in ACCA Manual S, 2004, in reference to sizing limitations of heat pump equipment.

The question is [sic] controversy can be answered with a simple true or false reply to the following statement. No further commentary is necessary. The relevant statement is,

In regards to Manual S, 2004, when a home's Manual J heat loss exceeds its Manual J heat gain, it is presumed to satisfy the "intended definition" of being in a "cold climate" and the expanding the [sic] oversizing limit from 15% to 25% x the total heat gain is defensible action? True or False

3. As an attachment to his December 3, 2019 request for a formal interpretation, Mr. Gough submitted five-pages of email correspondence from Hank Rutkowski, P.E. sent to David Rittlinger, Chief Mechanical and Fuel Gas Code Consultant at the North Carolina Office of the State Fire Marshal Engineering and Codes Division, on October 30, 2019. Mr. Rutkowski is the primary author of *Residential Equipment Selection: Manual S* (1995) ("ACCA Manual S") and *Residential Load Calculation: Manual J* (8th ed. 2006) ("ACCA Manual J"), both of which are published by the Air Conditioning Contractors of America ("ACCA").

4. That on December 16, 2019, Chief Code Consultant Carl Martin, on behalf of NC DOI, provided Mr. Gough with a formal interpretation addressing Section 3-4 of Manual S and Mr. Rutkowski's letter to Mr. Rittlinger. Among other things, the December 16, 2019 formal interpretation addressed Mr. Gough's demand for a "true or false" response to the question posed in Mr. Gough's December 3, 2019 request:

It is not possible to respond as "True or False" to the question asked above because there will be some cases where Manual J will consider a location a cold climate where the heat loss exceeds the heat gain and other locations where that would not

be considered a cold climate even though the heat loss exceeds the heat gain. Based on Mr. Rutkowski's letter I would conclude that heat loss to heat gain is not the only parameter to consider when determining a "cold climate" condition. Based on Mr. Rutkowski's letter apparently the intent is to allow the 1.25 factor in locations where cooling is insignificant to heating, but again that is not necessarily objective and leaves it to the designer to make the determination of what is "significant."

Copies of Mr. Gough's December 3, 2019 request for a formal interpretation, Mr. Rutkowski's email correspondence to Mr. Rittlinger, and NC DOI's December 16, 2019 formal interpretation were stipulated as admissible by the parties and admitted into evidence at the hearing of this matter as Petitioner's Exhibit A.

5. Mr. Gough subsequently appealed the December 16, 2019 formal interpretation to the North Carolina Building Code Council.

6. Mr. Gough is a general partner with Energy Solutions, L.P. based in Yadkinville, North Carolina who has completed ACCA's Educational Program for Instructor Certification in Load Calculation, Equipment Selection, and Air Side Design. Mr. Gough holds a license issued by the State Board of Examiners of Plumbing, Heating and Fire Sprinkler Contractors.

7. N.C.G.S. § 143-140(a) provides, in pertinent part, that:

(a) Any person desiring to raise any question under this Article or under the North Carolina State Building Code shall be entitled to a technical interpretation from the appropriate enforcement agency, as designated in the preceding section. Upon request in writing by any such person, the enforcement agency through the appropriate official shall within a reasonable time provide a written interpretation, setting forth the facts found, the decision reached, and the reasons therefor.

N.C.G.S. § 143-140(a) (2020).

8. Section 203.2.1.2 of the 2018 North Carolina Building Code, Administrative Code and Policies states:

203.2.1.2 Formal interpretations. Any person may request in writing a formal interpretation of the code. The request shall be addressed to the Chief Code Consultant for the Department of Insurance. The request shall be specific and shall

reference the code sections in question. All formal interpretations shall be in writing. A formal interpretation shall be binding on all parties unless appealed to the Building Code Council as specified in Section 201.9.2. Formal interpretations determined to be of a general nature may be posted on the department web site.

2018 N.C. Bldg. Code, Admin. Code and Policies, § 203.2.1.2.

9. Upon appeal of a formal interpretation of NC DOI to the Building Code Council, “[t]he Building Code Council shall have the duty, in hearing appeals, to give interpretations of such provisions of the Building Code as shall be pertinent to the matter at issue.” N.C.G.S. § 143-141(b). “Interpretations by the Council and local enforcement officials shall be based on a reasonable construction of the Code provisions.” *Id.*

10. Mr. Gough’s request for a formal interpretation implicated Section 312.1 of the 2012 North Carolina Mechanical Code, which provides, in pertinent part:

312.1 Load calculations. ...

...

For one- and two-family dwellings and townhouses, heating and cooling equipment shall be sized in accordance with ACCA Manual S based on building loads calculated in accordance with ACCA Manual J, or other approved heating and cooling calculation methodologies.

2012 N.C. Bldg. Code, Mechanical Code, § 312.1.

11. Because the heating equipment sizing requirements of ACCA Manual S are incorporated by reference into Section 312.1 of the 2012 North Carolina Mechanical Code, Mr. Gough’s request for a formal interpretation also implicates certain provisions of ACCA Manual S. Section 3 of ACCA Manual S provides guidance for sizing cooling equipment. With regard to sizing of heat pump equipment, Section 3-4 of Manual S provides in pertinent part:

3-4 Sizing Limitations

...

- If heat pump equipment (air-source or water-source) is installed in a warm or moderate climate, the total cooling capacity should not exceed the total cooling load by more than 15 percent.

- If heat pump equipment (air-source or water-source) is installed in a cold climate (where heating costs are a primary concern), the total cooling capacity can exceed the total cooling load by as much as 25 percent. (This allows the designer to place more emphasis on refrigeration-cycle heating performance).

ACCA Manual S, § 3-4 (1st ed. 1995) (emphasis added).

12. Section 4 of ACCA Manual S provides guidance for sizing residential air-source heat pumps.¹ In particular, Section 4-4 of Manual S addresses sizing limitations for residential heat pump equipment:

4-4 Air-Source Heat Pump Sizing Limits

When heating and cooling is required, the heat pump equipment should be sized so that the sensible cooling capacity is greater than the calculated sensible load and the latent cooling capacity is greater than the latent load. Ideally, the total cooling capacity should not exceed the total cooling load by more than 15 percent. However, in colder climates, the total cooling capacity may exceed the total cooling load by as much as 25 percent. (A larger package will produce a lower thermal balance point and this will translate into lower operating costs during the heating season.)

ACCA Manual S, § 4-4 (1st ed. 1995) (emphasis added).

13. Mr. Gough testified that in his opinion as a licensed heating contractor the oversizing of heat pump equipment by more than 15 percent based on the designer's determination that a residence is located in a "cold climate" or "colder climates" is becoming more common in North Carolina residential HVAC contracting. Oversizing such equipment requires larger duct runs and has been generally associated with higher installation costs and increased operating costs. Mr. Gough testified that oversized equipment may also degrade humidity control during the cooling season. Sections A6-3

¹ Mr. Gough explicitly referenced Section 3-4 of ACCA Manual S in his December 3, 2019 request for a formal interpretation to NC DOI, but did not reference Section 4-4. At the appeal hearing, however, Mr. Gough testified that Section 4-4 of ACCA Manual S more specifically applies to residential air-source heat pumps and is controlling with regard to this inquiry.

and A6-4 of ACCA Manual J addressing these concerns were admitted into evidence at the hearing of this matter as Petitioner's Exhibits J and K.

14. Mr. Gough testified that in his opinion as a licensed heating contractor that NC DOI erred in its formal interpretation by not responding to his inquiry with a simple true or false answer. As phrased, Mr. Gough's December 3, 2019 inquiry to NC DOI was: "In regards to Manual S, 2004, when a home's Manual J heat loss exceeds its Manual J heat gain, it is presumed to satisfy the 'intended definition' of being in a 'cold climate' and the expanding the oversizing limit from 15% to 25% x the total heat gain is defensible action? True or False[.]" At the appeal hearing, Mr. Gough contended that the "correct" answer to his December 3, 2019 request for a formal interpretation is "false" and that no further explanation was warranted from NC DOI.

15. As acknowledged by ACCA Manual S author Hank Rutkowski in his October 30, 2019 email correspondence to Mr. Rittlinger, the terms "cold climate" and "colder climates" are not defined in ACCA Manual S and no mathematical definition of what a "cold climate" or "colder climates" means is provided. Furthermore, the term "intended definition," which was set out in quotation marks in Mr. Gough's December 3, 2019 request for a formal interpretation to NC DOI, is likewise not defined in ACCA Manual S.

CONCLUSIONS OF LAW

Based on the foregoing findings of fact, the Council hereby makes the following conclusions of law:

1. Pursuant to N.C.G.S. §§ 143-140(a)(1) and 143-141(b), the Council finds that it has jurisdiction over the parties and the subject matter of this appeal of a formal interpretation of the North Carolina Building Code issued by NC DOI.

2. Because it involves an interpretation of a provision of the North Carolina Mechanical Code applicable to residential construction and commercial or multi-family construction, the Council finds that both the Commercial Super-Committee and Residential Super-Committee are required to consider this appeal of a formal interpretation and make recommendations to the full Council for disposition, per N.C.G.S. § 143-136(c) and (d).

3. Because ACCA Manual S does not define the terms “cold climate,” “colder climates,” or “intended definition,” does not provide an alternative mathematical definition of what “cold climate” or “colder climates” mean, and because the purported true-false statement posed by Mr. Gough to NC DOI was confusing and not in accord with the rules of grammar, the Council finds Petitioner’s contention that his December 3, 2019 inquiry is properly answered “with a simple true or false reply” and that “no further commentary is necessary” to be unreasonable and without substantial legal basis.

4. For these reasons, and because the plain text of Sections 3-4 and 4-4 of ACCA Manual S, together with the October 30, 2019 email correspondence from Mr. Rutkowski, support the conclusion of NC DOI’s formal interpretation that “heat loss to heat gain is not the only parameter to consider when determining a ‘cold climate’ condition,” the Council finds that the December 16, 2019 formal interpretation by Chief Code Consultant Carl Martin is based on a reasonable construction of the applicable Code provisions.

5. In accordance with N.C.G.S. § 143-136(c) and (d), the Council's Commercial Super-Committee and Residential Super-Committee both unanimously recommended that the full Council affirm NC DOI's December 16, 2019 formal interpretation.

ORDER

Based on the foregoing findings of fact and conclusions of law, the Council hereby ORDERS that Chief Code Consultant Carl Martin's December 16, 2019 formal interpretation of Section 312.1 of the 2012 North Carolina Mechanical Code and Section 3-4 of ACCA Manual S, introduced and admitted at the August 19, 2020 hearing as Petitioner's Exhibit A, is AFFIRMED.

SO ORDERED, this the 31th day of August 2020.

North Carolina Building Code Council

By: Robbie B. Davis
Robbie B. Davis, Chair

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that I have this day served the foregoing ORDER upon the Petitioner via email and United States certified mail, return receipt requested, addressed as follows:

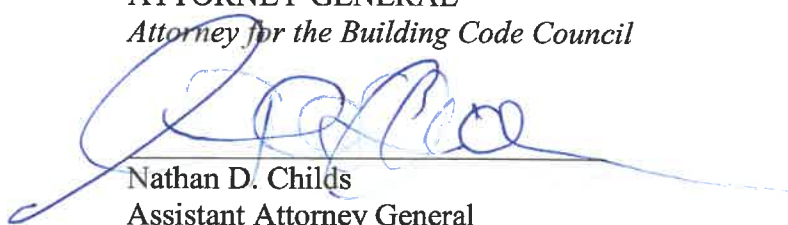
Danny G. Gough
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(Petitioner)

I HEREBY CERTIFY that I have this day served the foregoing ORDER upon counsel for Respondent via State interoffice mail, addressed as follows:

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(Attorneys for Respondent North Carolina Department of Insurance)

This 1st day of SEPTEMBER 2020.

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