

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION  
ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Michael M. Gibson, Chairman  
Dr. Gary S. Arnold  
Dr. Randall J. Charbeneau

In the Matter of

NUCLEAR INNOVATION NORTH AMERICA  
LLC

(South Texas Project Units 3 and 4)

Docket No. 52-12-COL and 52-13-COL

ASLBP No. 09-885-08-COL-BD01

February 29, 2012

MEMORANDUM AND ORDER

(Providing Proposed Questions for Evidentiary Hearing on Contention DEIS-1-G)<sup>1</sup>

Pursuant to 10 C.F.R. § 2.1207(a)(3)(iii), this issuance and the accompanying attachments provide the proposed questions submitted to the Licensing Board by Intervenors,<sup>2</sup> NRC Staff, and Applicant in connection with the evidentiary hearing on Contention DEIS-1-G, held on October 31, 2011 in Rockville, Maryland.

It is so ORDERED.

FOR THE ATOMIC SAFETY  
AND LICENSING BOARD

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Michael M. Gibson, Chairman  
ADMINISTRATIVE JUDGE

Rockville, Maryland  
February 29, 2012

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<sup>1</sup> Redacted material contained in several of the attachments concerns proposed questions regarding Contention CL-2, on which this Board ruled in LBP-11-38, 74 NRC \_\_\_ (slip op.) (Dec. 29, 2011).

<sup>2</sup> Intervenors are three public interest organizations: Sustainable Energy and Economic Development Coalition, South Texas Association for Responsible Energy, and Public Citizen.

ATTACHMENT 1

Intervenors' Proposed Questions Regarding Contention DEIS-1-G

[REDACTED]

[REDACTED]

### **Contention DEIS 1-G**

#### Applicant & Staff witnesses

1. Do the witnesses agree that prior to 2010, the only major city in Texas that had adopted a building code that required energy efficiency greater than the statewide code was Houston?
2. Do the witnesses agree that Houston's prior building code was significantly less energy efficient than the statewide 2009 IECC and IRC codes?
3. Do the witnesses agree that Houston's energy efficient building code was not effective until August 2008 for non-residential and January 2009 for residential?
4. Do the witnesses agree that because the FEIS relies on 2010 ERCOT forecast data, any energy efficient building code adoptions that were not effective in 2009 (the most recent year of historic load data for the FEIS) would not affect the 2010 ERCOT forecast?
5. Do the witnesses agree that Dallas' energy efficient building code was not effective until April 1, 2011?
6. Do the witnesses agree that San Antonio's energy efficient building code was not effective until January 1, 2010?
7. Do the witnesses agree that Austin's energy efficient building code was not effective until April 19, 2010?
8. Do the witnesses agree that El Paso's energy efficient building code was not effective until April 1, 2011?

9. Do the witnesses agree that Fort Worth's energy efficient building code was not effective until April 1, 2011?
10. Do the witnesses agree that the energy efficient building codes affect only new construction and major renovations?
11. Do the witnesses agree that energy efficient building codes typically have a grace period of six to twelve months for compliance?
12. Do the witnesses agree that there are generally significant time lags between from design to completion of large new buildings and these lags cause delays in realizing savings from energy efficient building codes?
13. Do the witnesses agree that in 2008 and 2009 new construction activity slowed significantly?
14. Do the witnesses agree that in 2008 and 2009 load growth was nearly flat in the ERCOT area?
15. Do the witnesses agree that new construction represents less than 2% load growth on average?
16. Do the witnesses agree that building code changes typically affect new construction more than existing buildings?
17. Because building code changes typically affect new construction more than existing buildings and new construction in 2008-2009 was slack, the energy reductions realized in 2008-2009 were relatively small compared to years when new construction is more robust?
18. Do the witnesses agree that to measure energy use reductions from building codes baselines are adopted to estimate savings for market-driven construction?
19. Do the witnesses agree that the baseline for determining savings in Texas energy efficiency building codes only quantify savings that are realized beyond the code?

Respectfully submitted,

/s/ Robert V. Eye

Robert V. Eye, Kan. Sup. Ct. No.10689

Kauffman & Eye

123 SE 6th Ave., Suite 200

Topeka, Kansas 66603

785-234-4040

bob@kauffmaneye.com

Interviewers' proposed questions for Mr. Rosenthal

Your testimony earlier was that in 2020 there would be a need for power. Is that ~~an opinion~~ an opinion that is conditioned on other factors? What are those factors?

Interim's Questions for <sup>staff</sup> Witnesses

Do the witnesses agree that an 1191 MW savings  
in 2023 is approximately half the capacity  
that would be provided by STP 3 & 4?

## Questions from Intervenors

- ① Did your analysis of adjustments to the ACEEE take into account the annual load growth for each year and the cumulative nature of building codes?
- ② Do you agree that Intervenor's ~~own~~ analysis ~~of~~ codes correctly handled your original criticisms of the ACEEE study?  
For example ERCOT as 85% of Texas,  
new load, new timing of code,  
admitting not 100% compliance,  
changing percentage impact based on actual codes adopted?
- ③ Does the witness agree that to the extent that future code adoptions are speculative, that plant retirements are speculative?
- ④ ~~Does the witness agree that the building codes adopted under~~  
Do you agree that the building code legislation anticipates adoption of code upgrades?  
continued

ATTACHMENT 2

NRC Staff's Proposed Questions Regarding Contention DEIS-1-G



1. In your direct testimony, in Table 1 at page 10 (Ex. INT000001), you concluded that the reduction in peak demand due to building energy codes would be 494 MW in 2015 and 1,404 MW in 2020, correct?
2. In the Staff's direct testimony, in Table 4 at page 50 (Ex. NRC000031), Dr. Scott concluded that the reduction in peak demand would be 576 MW in 2015 and 1,167 MW in 2020, correct?
3. Would you consider these values of estimated savings due to building energy codes calculated by you and the Staff to be similar?
4. Do your savings estimates of 494 MW and 1,404 MW assume that future updates beyond the 2009 versions of the building energy codes will be adopted?
5. If so, do these future updates increase the amount of expected energy savings in your calculations?

B. Use of the 2007 ACEEE Report

Contention DEIS-1 references the 2007 report of the American Council for an Energy-Efficient Economy (ACEEE) (Ex. STP000008), in support of the Intervenors' position.

Intervenors' Motion for Leave to File New Contentions Based on the Draft Environmental Impact Statement, at 4 (May 19, 2010) (citing David Power Report at 4). However, in the Intervenors' rebuttal testimony, Mr. Mosenthal states that "the 2007 ACEEE estimate is no longer relevant to these proceedings" and that the estimates contained in his direct testimony were based on a separate analysis. Mosenthal Rebuttal Testimony at 9 (Ex. INT000R. 41). This change in the Intervenors' position should be further examined. The following questions are designed to determine whether the Intervenors view the Staff's use of the 2007 ACEEE report as reasonable.

1. Do you agree that Contention DEIS-1, as submitted by the Intervenors, was based on the 2007 ACEEE Report?

2. On page 4 of your direct testimony (Ex. INT000001), you stated that you “present[ ] an updated analysis, building off a 2007 analysis that the American Council for an Energy Efficient Economy (ACEEE) performed for Texas,” correct?
3. On page 6 of your direct testimony (Ex. INT000001), do you also state, “[w]hile the ACEEE analysis did not reflect the exact situation Texas finds itself in, I have made appropriate adjustments to the analysis . . . .”?
4. However, on page 9 of your rebuttal testimony (Ex. INT000R. 41), you state that your “direct testimony was based on a separate analysis of the likely future impacts from the known building codes as well as Federal Standards in Texas, based on the current best information and forecast” and that you believe “the 2007 ACEEE estimate is no longer relevant to these proceedings.” Is this correct?
5. Do you agree that the 2007 ACEEE report can be used as the basis for an analysis of the impacts of the 2009 building energy codes in the ERCOT region if appropriate adjustments are made to it?
6. Do you agree that the Staff’s adjustments to the 2007 ACEEE analysis are reasonable? If not, why not?

C. Baseline Year for Energy Savings and Code Adoption Dates

All parties agree that some proportion of energy savings due to building energy codes are likely embedded in ERCOT’s forecasts. See Mosenthal Rebuttal Testimony at 4 (Ex. INT000R. 41). There is further agreement that many local jurisdictions in Texas adopted codes prior to the State’s adoption of a specific code. See *id.* The Staff and Applicant believe that the local adoption of building energy codes tended to reduce electricity consumption, and these trends were captured in the historical data that were implicitly built into the ERCOT econometric forecasting equations. Staff DEIS-1 Direct Testimony at A36-A38, pp. 30-32 (Ex. NRC000031); Applicant DEIS-1 Direct Testimony at A23 & A24, pp. 16-18 (Ex. STP000001). However, the Intervenors do not agree with the Staff and Applicant regarding

the extent to which local adoption of codes would have impacted ERCOT's forecasts.

Mosenthal Rebuttal Testimony at 4 (Ex. INT000R. 41). The Intervenor's disagreement seems to be based, at least in part, on the dates when the six largest cities in Texas adopted the 2009 version of the International Energy Conservation Code (IECC). See *id.* at 4-5 & Table 1. These questions are designed to explore the basis for the Intervenor's position that the 2001 version of the code is the appropriate baseline to use for calculations of energy savings expected from the adoption of the 2009 versions.

1. Does Table 1 in your rebuttal testimony (Ex. INT000R. 41) present the effective dates of the code versions used by the 6 largest cities in Texas?
2. For 5 of the 6 cities, you present the effective dates of the 2009 code, correct?
3. Do you agree that the baseline used by the Staff was not the 2009 code but the 2006 code?
4. On page 5 of your rebuttal testimony (Ex. INT000R. 41), you stated that the only major city in Texas that adopted any code above the statewide baseline that was in effect prior to 2010 was Houston, correct?
5. Did none of the other cities listed in Table 1 adopt the 2003 or 2006 versions of the IECC?
6. If the other 6 localities adopted any standard between 2001 and 2010, what standard did they adopt and when did they do so?
7. What version of the International Residential Code (IRC) do these localities use? When was it adopted? Prior to that, what version of the IRC did they use, and when was that version adopted?
8. Would you agree that the 2003 and 2006 standards influenced the demand for electricity in the ERCOT region?

#### D. Updates to Building Energy Codes

In calculating savings to be achieved by the building energy codes, Mr. Mosenthal assumes that the model codes will be updated and adopted by Texas every three years. Mosenthal Direct Testimony at 9 (Ex. INT000001). This assumption deserves further examination because Mr. Mosenthal does not provide any legal or regulatory basis for it. The following questions are designed to determine whether there is any legal or regulatory basis for this assumption.<sup>3</sup>

1. Mr. Mosenthal, your analysis assumes that the IECC and IRC will be updated every three years and will be widely adopted in Texas, does it not?
2. Does Texas law provide for the automatic adoption of IECC and IRC code updates?
3. In the past decade, has the State of Texas, by law or regulation, updated its building energy codes every three years?

#### E. Renovations

The Intervenors claim that Mr. Mosenthal's calculated savings are conservative because they do not include savings that would be achieved through major building renovations. Mosenthal Rebuttal Testimony at 10 (Ex. INT000R. 41). In order to calculate savings from renovations, Mr. Mosenthal assumed a renovation cycle of once every 25 years for buildings, which "would imply fully 4% of existing building energy consumption would turnover and become applicable to the codes *each year*." Mosenthal Rebuttal Testimony at 10 (Ex. INT000R. 41). These questions are designed to determine the basis for Mr. Mosenthal's assumptions and conclusions regarding energy savings that can be achieved when buildings

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<sup>3</sup> The questions below specifically pertain to portions of Mr. Mosenthal's testimony that the Staff has proposed to exclude as being outside the scope of the contention. To the extent that the Board excludes Mr. Mosenthal's testimony on future building code updates, then the Staff withdraws its request to ask the questions below.

are renovated.<sup>4</sup>

1. On what do you base your assumption that buildings undergo major renovations that would subject them to the new codes once every 25 years?
2. On what do you base your assumption that 4 percent of all building energy consumption would be exposed to savings each year as a result of these renovations?
3. What percentage of single-family housing has an addition or renovation each year in the Texas region?
4. When a single-family home is renovated, what portion of the home must meet the new building energy code?
5. What portion of total household electricity consumption is substantially influenced by the code? Are cooking, refrigeration, household appliances, hot water, and lighting affected by the codes?
6. What percentage of an existing household's electricity consumption would be exposed to the updated code as a result of the addition or renovation?
7. When a commercial building undergoes a major renovation, what portion of the building needs to be brought up to the new code?
8. On page 6 of your rebuttal testimony (Ex. INT000R. 41), you state that the "codes primarily impact new construction." However, you later state, on page 10, that renovation-related savings could result in "2-3 times more savings than I have modeled in my analysis." If codes primarily impact new construction, how could

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<sup>4</sup> The questions below specifically pertain to portions of Mr. Mosenthal's testimony that the Staff has proposed to exclude as being outside the proper scope of rebuttal. To the extent that the Board excludes Mr. Mosenthal's testimony on renovations, then the Staff withdraws its request to ask the questions below.

savings achieved through renovations be 2 to 3 times as great as savings due to new construction?

Respectfully submitted,

**/Signed (electronically) by/**

Michael A. Spencer  
Counsel for NRC Staff  
U.S. Nuclear Regulatory Commission  
Mail Stop O-15 D21  
Washington, DC 20555-0001  
(301) 415-4073  
Michael.Spencer@nrc.gov

**Executed in Accord with 10 CFR § 2.304(d)**

Andrea L. Silvia  
Counsel for the NRC Staff  
U.S. Nuclear Regulatory Commission  
Mail Stop O-15 D21  
Washington, DC 20555-0001  
(301) 415-8554  
Andrea.Silvia@nrc.gov

Dated at Rockville, Maryland  
This 12th day of July 2011

NRC Staff Proposed Questions for Mr. Mosenthal.

Do you have any information on the quantitative uncertainty of the ERCOT forecasts due to weather and economic growth in Texas?

How does that compare with the impacts of the 2009 building energy codes?

2. On page 4 of your direct testimony (Ex. INT000001), you stated that you "present[ ] an updated analysis, building off a 2007 analysis that the American Council for an Energy Efficient Economy (ACEEE) performed for Texas," correct?
3. On page 6 of your direct testimony (Ex. INT000001), do you also state, "[w]hile the ACEEE analysis did not reflect the exact situation Texas finds itself in, I have made appropriate adjustments to the analysis . . . ."?
4. However, on page 9 of your rebuttal testimony (Ex. INT000R. 41), you state that your "direct testimony was based on a separate analysis of the likely future impacts from the known building codes as well as Federal Standards in Texas, based on the current best information and forecast" and that you believe "the 2007 ACEEE estimate is no longer relevant to these proceedings." Is this correct?
5. Do you agree that the 2007 ACEEE report can be used as the basis for an analysis of the impacts of the 2009 building energy codes in the ERCOT region if appropriate adjustments are made to it?
6. Do you agree that the Staff's adjustments to the 2007 ACEEE analysis are reasonable? If not, why not?

Please ask these questions

~~Assuming Year for Energy Savings and Code Adoption Dates~~

All parties agree that some proportion of energy savings due to building energy codes are likely embedded in ERCOT's forecasts. See Mosenthal Rebuttal Testimony at 4 (Ex. INT000R. 41). There is further agreement that many local jurisdictions in Texas adopted codes prior to the State's adoption of a specific code. See *id.* The Staff and Applicant believe that the local adoption of building energy codes tended to reduce electricity consumption, and these trends were captured in the historical data that were implicitly built into the ERCOT econometric forecasting equations. Staff DEIS-1 Direct Testimony at A36-A38, pp. 30-32 (Ex. NRC000031); Applicant DEIS-1 Direct Testimony at A23 & A24, pp. 16-18 (Ex. STP000001). However, the Interveners do not agree with the Staff and Applicant regarding

Continuation from  
page 11.



the extent to which local adoption of codes would have impacted ERCOT's forecasts.

Mosenthal Rebuttal Testimony at 4 (Ex. INT000R. 41). The Intervenors' disagreement seems to be based, at least in part, on the dates when the six largest cities in Texas adopted the 2009 version of the International Energy Conservation Code (IECC). See *id.* at 4-5 & Table 1. These questions are designed to explore the basis for the Intervenors' position that the 2001 version of the code is the appropriate baseline to use for calculations of energy savings expected from the adoption of the 2009 versions.

1. Does Table 1 in your rebuttal testimony (Ex. INT000R. 41) present the effective dates of the code versions used by the 6 largest cities in Texas?
2. For 5 of the 6 cities, you present the effective dates of the 2009 code, correct?
3. Do you agree that the baseline used by the Staff was not the 2009 code but the 2006 code?
4. On page 5 of your rebuttal testimony (Ex. INT000R. 41), you stated that the only major city in Texas that adopted any code above the statewide baseline that was in effect prior to 2010 was Houston, correct?
5. Did none of the other cities listed in Table 1 adopt the 2003 or 2006 versions of the IECC?
6. If the other 6 localities adopted any standard between 2001 and 2010, what standard did they adopt and when did they do so?
7. What version of the International Residential Code (IRC) do these localities use? When was it adopted? Prior to that, what version of the IRC did they use, and when was that version adopted?
8. Would you agree that the 2003 and 2006 standards influenced the demand for electricity in the ERCOT region?

NRC Staff Proposed Question for NRC Staff Witnesses

- In terms of the statewide adoption of the 2009 code, assuming compliance with the code occurs in 2012, when does the ERCOT forecast first pick up the effects of that adoption?

ATTACHMENT 3

Applicant's Proposed Questions Regarding Contention DEIS-1-G

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

_____ )	
In the Matter of )	Docket Nos. 52-012-COL
)	52-013-COL
NUCLEAR INNOVATION NORTH AMERICA LLC )	
)	
(South Texas Project Units 3 and 4) )	July 12, 2011
_____ )	

**NUCLEAR INNOVATION NORTH AMERICA LLC'S**  
**PROPOSED QUESTIONS FOR THE BOARD ON INTERVENORS' DIRECT AND**  
**REBUTTAL TESTIMONY OF PHILIP H. MOSENTHAL RELATED TO**  
**CONTENTION DEIS-1-G**

Pursuant to 10 C.F.R. § 2.1207(a)(3), the U.S. Nuclear Regulatory Commission ("NRC") Atomic Safety and Licensing Board's ("Board's") Scheduling Order dated March 11, 2011, and the Board's Initial Scheduling Order dated October 20, 2009, Applicant Nuclear Innovation North America LLC ("NINA") hereby submits its proposed questions for the Board to consider propounding to Mr. Philip H. Mosenthal at the evidentiary hearing regarding Contention DEIS-1-G. These questions are based on Mr. Mosenthal's direct and rebuttal testimony filed on May 9 and May 31, 2011, respectively, related to Contention DEIS-1-G.

Following the Board's guidelines for submittals of proposed questions for the Board to ask direct and rebuttal witnesses, this submittal provides a brief description of the issues that NINA contends need further examination, the objective of the examination, and the proposed line of questioning that may logically lead to achieving the objective.<sup>1</sup>

<sup>1</sup> See Initial Scheduling Order, at 16 (Oct. 20, 2009).

**I. MR. MOSENTHAL GAVE CREDIT FOR FUTURE CHANGES TO BUILDING CODES IN TEXAS**

**A. Brief Description of the Issue**

Has Mr. Mosenthal correctly calculated the energy savings from the 2010 energy efficient building code in Texas?

**B. References**

Mosenthal Direct Testimony (Exh. INT000001) at 5, lines 1-2.

Mosenthal Direct Testimony (Exh. INT000001) at 6, lines 7-14.

Mosenthal Direct Testimony (Exh. INT000001) at 9, lines 18-19, and at 10, lines 1-2.

Mosenthal Direct Testimony (Exh. INT000001) at 10, Table 1.

Mosenthal Direct Testimony (Exh. INT000001) at 13, Table 2.

Exhs. INT000003 and INT000004.

Mosenthal Rebuttal Testimony (Exh. INT000041) at 10, lines 17-19.

Mosenthal Rebuttal Testimony (Exh. INT000041) at 11, lines 16-19.

**C. Objective of the Examination**

Demonstrate that Mr. Mosenthal’s estimates of energy savings from energy efficient building codes in Texas improperly include savings from future changes in the code that have not yet been enacted.

**D. Proposed Line of Questioning**

- Mr. Mosenthal, at various places in your direct and rebuttal testimony and in Exhibit INT000004, you estimate that energy efficient building codes in Texas will result in a savings of 494 MW in 2015, 1,404 MW in 2020, and 2,419 MW in 2025, using Electric Reliability Council of Texas (“ERCOT”) 2010 forecasts.

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According to 10 C.F.R. § 2.1207(a)(3)(iii)**

- Do those values include savings from future changes in the Texas building codes that you expect will occur after 2010?
- Have you calculated the savings solely from the 2010 energy efficient building code in Texas?
  - If yes, what are the amounts of those savings?
- Similarly, referring to Exhibit INT000003, do the savings identified in the Exhibit for the years 2015 and later include savings from future changes in the Texas building codes that you expect will occur after 2010?

**II. FUTURE CHANGES IN TEXAS BUILDING CODES**

**A. Brief Description of the Issue**

Is there any basis for Mr. Mosenthal's assumptions regarding future changes in building codes in Texas?

**B. References**

Mosenthal Direct Testimony (Exh. INT000001) at 7, lines 3-6.

Mosenthal Direct Testimony (Exh. INT000001) at 9, lines 2-14.

Exhs. INT000016 and INT000017.

**C. Objective of the Examination**

Demonstrate that future changes in energy efficient building codes in Texas are speculative.

**D. Proposed Line of Questioning**

- Mr. Mosenthal, on page 7 of your direct testimony, lines 3-6, you state that there is an ongoing procedure for regular code updates. Similarly, on page 9, lines 2-3 of your direct testimony, you state that it is the current practice in Texas to consider updates to statewide codes after each new standard is published.

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According to 10 C.F.R. § 2.1207(a)(3)(iii)**

- Is there a law or regulation that requires that code updates be automatically adopted by Texas?
- In fact, do you agree that, pursuant to 34 Tex. Admin. Code § 19.52, the State Energy Conservation Office is only required to consider whether to adopt code updates?
- Are you aware that Texas did not adopt the 2006 update to the International Energy Conservation Code (“IECC”) for private residential and commercial buildings?
- Are you aware that Texas did not adopt the 2003 update to the IECC for private residential and commercial buildings?
- Mr. Mosenthal, on page 9, lines 11-13 of your direct testimony, you cite an Energy Systems Laboratory (“ESL”) and a Department of Energy (“DOE”) document for the proposition that the 2012 IECC will result in a savings of 39% for residential buildings and 22% for non-residential buildings.
  - Has the ESL document been designated as Exhibit INT000016?
    - Do you agree that Exhibit INT000016 does not mention the 2012 IECC?
    - Do you also agree that Exhibit INT000016 does not refer to a savings of 39% or 22% for the state of Texas?
  - Has the DOE document been designated as Exhibit INT000017?
    - Do you agree that Exhibit INT000017 does not mention either the 39% or the 22% figure?
    - Do you also agree that Exhibit INT000017 does not compare the 2012 IECC against the 2009 IECC, but only against the 2006 IECC?

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According to 10 C.F.R. § 2.1207(a)(3)(iii)**

- Do you agree that Exhibit INT000017 only estimates a 30% savings for the 2012 IECC relative to the 2006 IECC, not the 39% savings reported in your testimony relative to the 2009 IECC?
- Mr. Mosenthal, on page 9, lines 11-14 of your direct testimony, you estimate that future code updates would achieve savings of 10% for residential buildings and 4-5% for non-residential buildings for each update.
  - Do you have any references to support those assumptions?
  - Do savings become more difficult to achieve with each additional code update?
  - Would you expect that future code updates will achieve progressively less savings?
  - Other than the 2012 IECC, do you know what the content of the future code updates will be?
  - In order for a person to calculate the savings to be achieved by a code update, should that person know the content of the code update?

**III. MR. MOSENTHAL’S ADJUSTMENTS TO THE AMERICAN COUNCIL FOR AN ENERGY EFFICIENT ECONOMY (“ACEEE”) ANALYSIS**

**A. Brief Description of the Issue**

What are the amounts of the adjustments made by Mr. Mosenthal to the ACEEE analysis?

**B. References**

Mosenthal Direct Testimony (Exh. INT000001) at 6-8.

Mosenthal Rebuttal Testimony (Exh. INT000041) at 9-10.

**C. Objective of the Examination**

Determine the amount of the adjustments that Mr. Mosenthal made in the ACEEE analysis.

**D. Proposed Line of Questioning**

- Mr. Mosenthal, on pages 6 through 8 of your direct testimony, you identify four adjustments that should be made in the 2007 ACEEE analysis of savings from new building codes in Texas.
  - With respect to each of those four adjustments, do you agree that the savings predicted by the ACEEE analysis was too high and should be adjusted downward?
    - The first adjustment on page 6 of your direct testimony pertains to the fact that the new building code in Texas does not become effective until 2011-2012, which is later than the assumption in the ACEEE analysis. When you accounted for this factor in your analysis, by what amount did you reduce the megawatt savings estimated in the ACEEE analysis in 2015? in 2020? in 2025?
    - The second adjustment on page 7 of your direct testimony states that the ACEEE analysis assumed greater improvements in energy efficiency than will actually be achieved by the 2010 energy efficient building code in Texas. When you accounted for this factor in your analysis, by what amount did you reduce the megawatt savings estimated in the ACEEE analysis in 2015? in 2020? in 2025?
    - The third adjustment on pages 7 and 8 of your direct testimony states that the savings predicted by the 2007 ACEEE analysis should be reduced because it is not based upon the most recent ERCOT analysis. When you

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According to 10 C.F.R. § 2.1207(a)(3)(iii)**

accounted for this factor in your analysis, by what amount did you reduce the megawatt savings in the ACEEE analysis in 2015? in 2020? in 2025?

- The fourth adjustment on page 8 of your direct testimony states that the savings predicted by the 2007 ACEEE analysis should be reduced because it was overly optimistic in assuming 100% compliance with the building code. When you accounted for this factor in your analysis, by what amount did you reduce the megawatt savings in the ACEEE analysis in 2015? in 2020? in 2025?
- Taking all four adjustments together from pages 6 through 8 of your direct testimony, what was the cumulative amount of the reduction that your analysis made in the estimated megawatt savings in the ACEEE report in 2015? in 2020? in 2025?
- On page 10 of your rebuttal testimony, on lines 2 and 8, you state that your direct testimony accounts for the fact that the ACEEE analysis addressed the full state of Texas, and not just the ERCOT region.
  - I do not see that issue discussed in your direct testimony. Please tell me where it is addressed?
  - When this factor is taken into account, by what amount should the megawatt savings in the ACEEE analysis be reduced in 2015? in 2020? in 2025?

**IV. BASELOAD GENERATION**

**A. Brief Description of the Issue**

Are there differences between baseload generation and peaking generation?

**B. References**

Mosenthal Direct Testimony (Exh. INT000001) at 11.

**C. Objective of the Examination**

Demonstrate that there are differences between baseload generation and peaking generation.

**D. Proposed Line of Questioning**

- Mr. Mosenthal, on page 11 of your direct testimony, lines 13-15, you state that “any reduction in the total loads can translate directly to reductions in the need for baseload capacity, since the ‘peaker’ units that supplement baseload would still exist and can still capture the same differential between the baseload generation and the actual peak.”
  - Do you agree that the energy generated by peak load plants typically is more expensive than the energy generated by baseload plants? In fact, on page 11 of your direct testimony, lines 7-8, do you state that baseload plants “are generally the cheapest per kWh to run once they are built”?
- Mr. Mosenthal, on page 11 of your direct testimony, line 20, you state that “building codes have a tendency to somewhat flatten the load curves on the system.”
  - Do you agree that this flattening of load curves would reduce demand for the peaking units more than demand for baseload units? In fact, on page 11 of your direct testimony, lines 21-22, do you state that this would “free[] up more peaking generating capacity for supplemental power”?

**V. MR. MOSENTHAL’S CONCLUSIONS**

**A. Brief Description of the Issue**

Are Mr. Mosenthal’s conclusions based upon excluded factors and speculation?

**B. References**

Mosenthal Direct Testimony (Exh. INT000001) at 17, lines 1-6.

**C. Objective of the Examination**

Demonstrate that Mr. Mosenthal’s conclusions are based upon savings from the Federal Energy Independence and Security Act (“EISA”) and savings from future building code updates.

**D. Proposed Line of Questioning**

- Mr. Mosenthal, I would like to refer you to page 17 of your direct testimony, lines 1 through 6.
  - In drafting these sentences, were your conclusions based in part upon savings from the EISA?
  - Similarly, in drafting these sentences, were your conclusions based in part upon the savings to be achieved from future code updates in Texas?

**VI. ADOPTION OF IECC BY CITIES IN TEXAS**

**A. Brief Description of the Issue**

Did cities in Texas adopt the IECC much earlier than indicated by Mr. Mosenthal?

**B. References**

Mosenthal Rebuttal Testimony (Exh. INT000041) at 4-6.

**C. Objective of the Examination**

Demonstrate that cities in Texas adopted versions of the IECC earlier than indicated by Mr. Mosenthal.

**D. Proposed Line of Questioning**

- Mr. Mosenthal, would you please turn to the table on page 5 of your rebuttal testimony. Based upon this table, you conclude that the ERCOT forecasts did not account for any significant savings from the adoption of the IECC by cities in Texas.
  - Is it true that, with the exception of Houston, this table only addresses the 2009 IECC?

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According to 10 C.F.R. § 2.1207(a)(3)(iii)**

- Did you consider whether cities may have adopted earlier versions of the IECC?
- For example, are you aware that Dallas had adopted the 2006 IECC prior to adopting the 2009 IECC? [Reference Exhibit STP000010]
- Are you aware that Forth Worth had adopted the 2003 IECC prior to adopting the 2009 IECC? [Reference Exhibit STP000010]
- Thus, do you agree that some of the savings from the 2003 and the 2006 IECC in Forth Worth and Dallas would be reflected in the 2010 ERCOT forecasts?

**VII. RECENT LEGISLATION**

**A. Brief Description of the Issue**

Are the statutes referenced on page 8, footnote 7, of the Mosenthal Rebuttal Testimony energy efficient building codes?

**B. References**

Mosenthal Rebuttal Testimony (Exh. INT000041) at 8, footnote 7.

**C. Objective of the Examination**

Demonstrate that the statutes referenced in footnote 7 of the Mosenthal Rebuttal Testimony are not energy efficient building codes.

**D. Proposed Line of Questioning**

- Mr. Mosenthal, please turn to page 8 of your rebuttal testimony, footnote 7.
  - Do you agree that SB 1125 pertains to energy efficiency incentive programs by electric utilities, and not energy efficient building codes?
  - Do you agree that SB 898 pertains to energy efficiency programs in institutions of higher education, and not energy efficient building codes?

- Do you agree that HB 51 pertains to energy efficiency standards for certain buildings and facilities of institutions of higher education, and not energy efficient building codes in general?

## **VIII. ENERGY SAVINGS FROM RENOVATIONS**

### **A. Brief Description of the Issue**

Has Mr. Mosenthal overestimated the savings from renovations of buildings?

### **B. References**

Mosenthal Rebuttal Testimony (Exh. INT000041) at 10, lines 11-19.

### **C. Objective of the Examination**

Demonstrate that Mr. Mosenthal has overestimated the savings from renovations of buildings.

### **D. Proposed Line of Questioning**

- Mr. Mosenthal, please turn to page 10 of your rebuttal testimony, lines 11-13. You state that your direct testimony only accounted for savings from new construction and not renovations. With that in mind, please turn to page 48 of the ACEEE report, which is Exhibit STP000008.
  - Do you agree that the 2,362 MW of savings in 2023 shown on that page of the ACEEE report pertains to new building codes?
  - Do you agree that the ACEEE value of 2,362 MW includes savings from renovations as well as new construction?
  - In fact, would you agree that Table C.1 of the ACEEE Report (pages 52-53) contains a detailed breakout of savings from renovations of existing residences?
- You state on page 10 of your rebuttal testimony, lines 11-19, that the savings from new construction typically represent only a percent or two of the total electric load in a given year, and that savings from renovations would be 2 to 3 times the savings from new

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construction, given an assumed renovation cycle of once every 25 years or 4 percent of existing buildings per year.

- Is your estimate that renovations would save 2 to 3 times the amount of new construction based upon a ratio of 4% divided by 1 to 2%?
- I would first like to explore whether it is appropriate to compare the 4 percent renovation assumption with the one or two percent value from new construction -  
- whether this is an apples to apples comparison.
  - Is the one or two percent savings from new construction based on a comparison to total electric load in the ERCOT region?
  - Is the 4 percent value from renovations based on a comparison to total buildings?
  - Would you agree that a percentage of total electrical load is not directly comparable to a percentage of total buildings?
    - Does total electric load also include load from transportation and other sources not impacted by the 2010 energy efficient building code?
    - Therefore, do you agree that a renovation rate of 4% does not equate to a savings in total electric load of 4%?
    - Do you agree that the savings from renovations would be less than 4% of the total electric load in Texas?
- You state on page 10 of your rebuttal testimony, lines 11-19, that savings from renovations would be 2 to 3 times the savings from new construction.

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- That statement appears to be inconsistent with the top of page 6 of your rebuttal testimony, where you discuss new construction and major renovations.
- In particular, on line 9 of that page, you state that “codes primarily impact new construction.”
- Do you agree that that statement is not consistent with your statement that the savings from renovations are 2 to 3 times that from new construction?
- Additionally, do you agree that the age of existing buildings is not evenly distributed, but instead is skewed toward newer buildings?
  - For example, are you aware that the U.S. census has found that 33% of Texas homes were built after 1990<sup>2</sup> and with the U.S. Energy Information Administration that, as of 2003, 26% of commercial buildings were built after 1990?<sup>3</sup>
  - Given the relatively high percent of new buildings relative to total buildings, do you agree that 4% of all buildings are not likely to be renovated each year, but instead a lesser percent will be renovated?
- Are you assuming that the energy savings from renovation of an existing building is equivalent to the energy savings from a new building?
  - Do you agree that renovation is unlikely to achieve the same amount of savings as new construction, because renovation typically does not replace all relevant aspects of construction, such as walls?

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<sup>2</sup> See [http://factfinder.census.gov/servlet/NPTable?\\_bm=y&-geo\\_id=04000US48&-qr\\_name=ACS\\_2009\\_5YR\\_G00\\_NP01&-ds\\_name=&-redoLog=false](http://factfinder.census.gov/servlet/NPTable?_bm=y&-geo_id=04000US48&-qr_name=ACS_2009_5YR_G00_NP01&-ds_name=&-redoLog=false), which is enclosed as Attachment 1.

<sup>3</sup> See <http://www.eia.gov/emeu/cbecs/cbecs2003/overview.pdf>. Excerpts from the report are enclosed as Attachment 2.

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- Do you agree that new buildings tend to be larger than existing buildings?
  - Are you aware that DOE has found that the size of the average U.S. single family home has increased from 2,666 square feet in 1970-79 to 3,680 square feet in 2000-2005—a 38% increase?<sup>4</sup>
  - Are you aware that DOE has found that the estimated total U.S. building floorspace has increased from 142 billion square feet in 1980 to 256 billion square feet in 2005?<sup>5</sup>
- Everything else being equal, do larger buildings consume more energy than smaller buildings?
- Therefore, do you agree that there is a greater potential for energy savings from new (larger) buildings than existing (smaller) buildings?
- Am I correct that you did not account for this factor in your analysis?
- On lines 17-19 of page 10 of your rebuttal testimony, you state that your estimates of 1,404 and 2,419 MW of savings in 2020 and 2025, respectively, due to new construction could rise to 2,800-4,200 MW in 2020 and 4,800 to 7,200 MW in 2025 when the savings from renovation are included.
  - Do your estimates of 1,404 and 2,419 MW of savings in 2020 and 2025, respectively, include savings from future building codes that have not yet been enacted by Texas?

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<sup>4</sup> See [http://www.btscoredatabook.net/docs/xls\\_pdf/2.2.5.pdf](http://www.btscoredatabook.net/docs/xls_pdf/2.2.5.pdf), which is enclosed as Attachment 3.

<sup>5</sup> See [http://www.btscoredatabook.net/docs/xls\\_pdf/2.2.1.pdf](http://www.btscoredatabook.net/docs/xls_pdf/2.2.1.pdf), which is enclosed as Attachment 4.

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- Likewise, do your estimates of 2,800-4,200 MW in 2020 and 4,800 to 7,200 MW in 2025 include projected savings from new building codes that have not yet been enacted by Texas?
- Have you made any estimates of the savings from renovations attributable only to the 2010 energy efficient building code in Texas?

Respectfully submitted,

*Signed (electronically) by Steven P. Frantz*

Steven P. Frantz

John E. Matthews

Stephen J. Burdick

Charles B. Moldenhauer

Morgan, Lewis & Bockius LLP

1111 Pennsylvania Avenue, N.W.

Washington, D.C. 20004

Phone: 202-739-3000

Fax: 202-739-3001

E-mail: sfrantz@morganlewis.com

*Counsel for Nuclear Innovation North America LLC*

Dated in Washington, D.C.  
this 12th day of July 2011

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According to 10 C.F.R. § 2.1207(a)(3)(iii)**

**ATTACHMENT 1**



## Texas

### Population and Housing Narrative Profile: 2005-2009

Data Set: 2005-2009 American Community Survey 5-Year Estimates

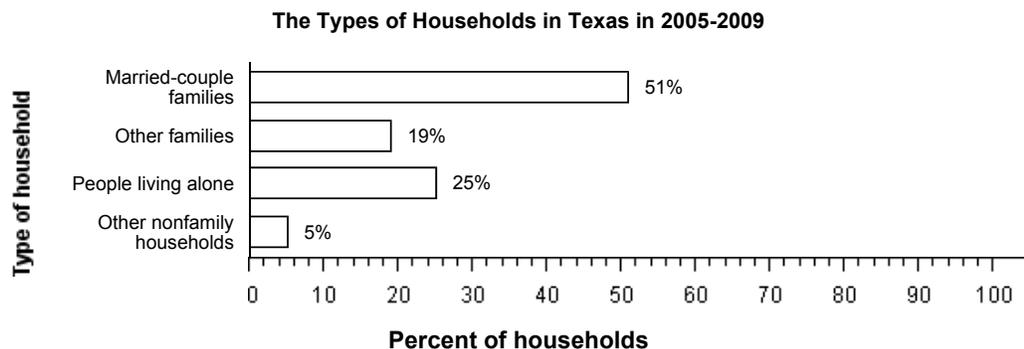
Survey: American Community Survey

NOTE. Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities and towns and estimates of housing units for states and counties.

For more information on confidentiality protection, sampling error, nonsampling error, and definitions, see [Survey Methodology](#).

**HOUSEHOLDS AND FAMILIES:** In 2005-2009 there were 8.3 million households in Texas. The average household size was 2.8 people.

Families made up 70 percent of the households in Texas. This figure includes both married-couple families (51 percent) and other families (19 percent). Nonfamily households made up 30 percent of all households in Texas. Most of the nonfamily households were people living alone, but some were composed of people living in households in which no one was related to the householder.

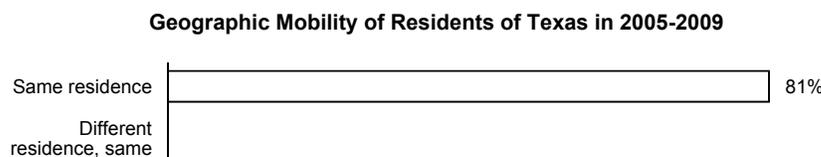


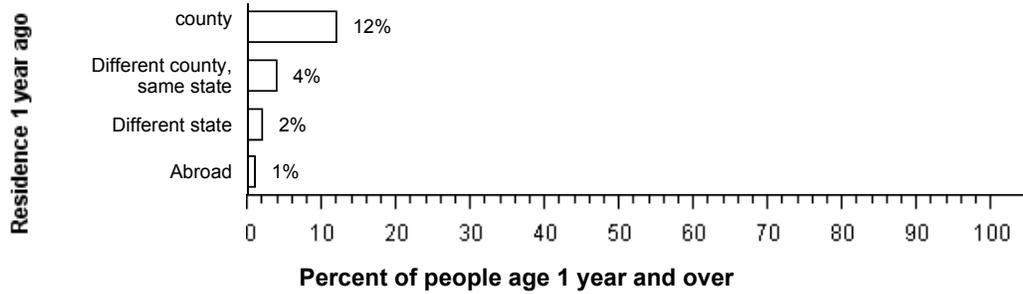
Source: American Community Survey, 2005-2009

**NATIVITY AND LANGUAGE:** Sixteen percent of the people living in Texas in 2005-2009 were foreign born. Eighty-four percent was native, including 61 percent who were born in Texas.

Among people at least five years old living in Texas in 2005-2009, 34 percent spoke a language other than English at home. Of those speaking a language other than English at home, 86 percent spoke Spanish and 14 percent spoke some other language; 43 percent reported that they did not speak English "very well."

**GEOGRAPHIC MOBILITY:** In 2005-2009, 81 percent of the people at least one year old living in Texas were living in the same residence one year earlier; 12 percent had moved during the past year from another residence in the same county, 4 percent from another county in the same state, 2 percent from another state, and 1 percent from abroad.



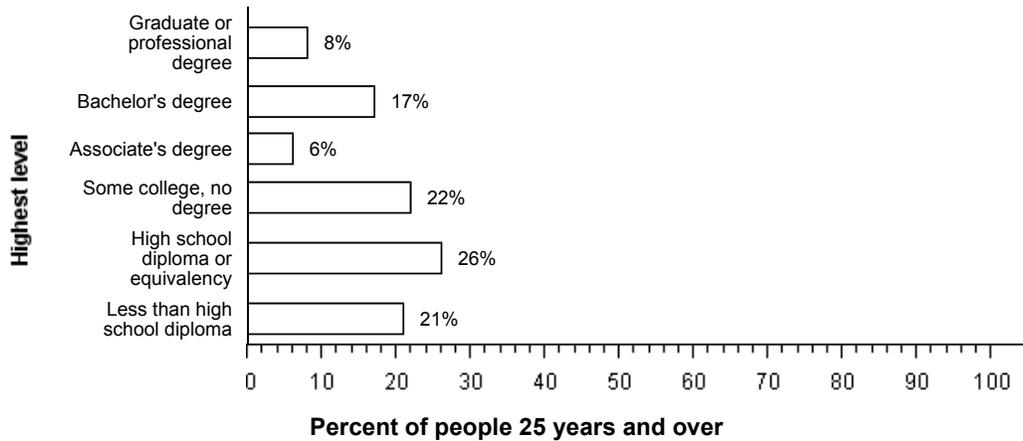


Source: American Community Survey, 2005-2009

**EDUCATION:** In 2005-2009, 79 percent of people 25 years and over had at least graduated from high school and 25 percent had a bachelor's degree or higher. Twenty-one percent were dropouts; they were not enrolled in school and had not graduated from high school.

The total school enrollment in Texas was 6.7 million in 2005-2009. Nursery school and kindergarten enrollment was 828,000 and elementary or high school enrollment was 4.3 million children. College or graduate school enrollment was 1.5 million.

**The Educational Attainment of People in Texas in 2005-2009**

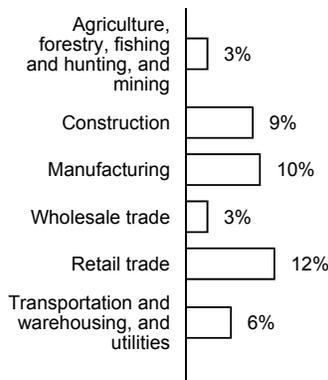


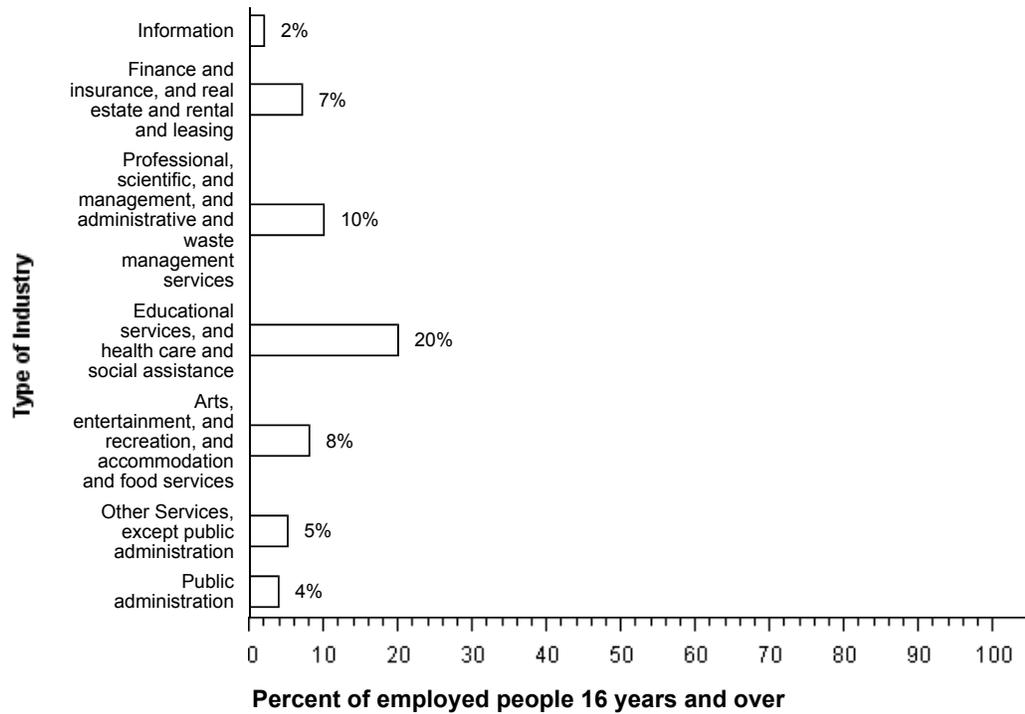
Source: American Community Survey, 2005-2009

**DISABILITY:** In Texas, among people at least five years old in 2005-2009, percent reported a disability. The likelihood of having a disability varied by age - from percent of people 5 to 15 years old, to percent of people 16 to 64 years old, and to percent of those 65 and older.

**INDUSTRIES:** In 2005-2009, for the employed population 16 years and older, the leading industries in Texas were Educational services, and health care, and social assistance, 20 percent, and Retail trade, 12 percent.

**Employment by Industry in Texas in 2005-2009**





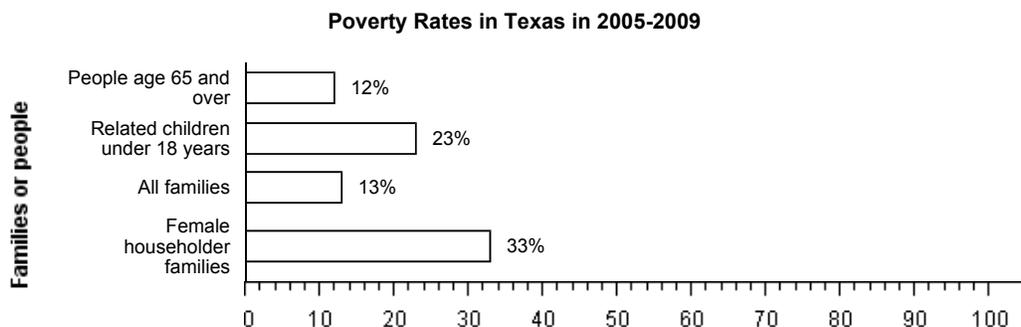
Source: American Community Survey, 2005-2009

**OCCUPATIONS AND TYPE OF EMPLOYER:** Among the most common occupations were: Management, professional, and related occupations, 33 percent; Sales and office occupations, 26 percent; Service occupations, 17 percent; Production, transportation, and material moving occupations, 12 percent; and Construction, extraction, maintenance, and repair occupations, 11 percent. Seventy-eight percent of the people employed were Private wage and salary workers; 14 percent was Federal, state, or local government workers; and 7 percent was Self-employed in own not incorporated business workers.

**TRAVEL TO WORK:** Seventy-nine percent of Texas workers drove to work alone in 2005-2009, 12 percent carpoolled, 2 percent took public transportation, and 4 percent used other means. The remaining 4 percent worked at home. Among those who commuted to work, it took them on average 24.7 minutes to get to work.

**INCOME:** The median income of households in Texas was \$48,199. Eighty-four percent of the households received earnings and 14 percent received retirement income other than Social Security. Twenty-three percent of the households received Social Security. The average income from Social Security was \$14,211. These income sources are not mutually exclusive; that is, some households received income from more than one source.

**POVERTY AND PARTICIPATION IN GOVERNMENT PROGRAMS:** In 2005-2009, 17 percent of people were in poverty. Twenty-three percent of related children under 18 were below the poverty level, compared with 12 percent of people 65 years old and over. Thirteen percent of all families and 33 percent of families with a female householder and no husband present had incomes below the poverty level.

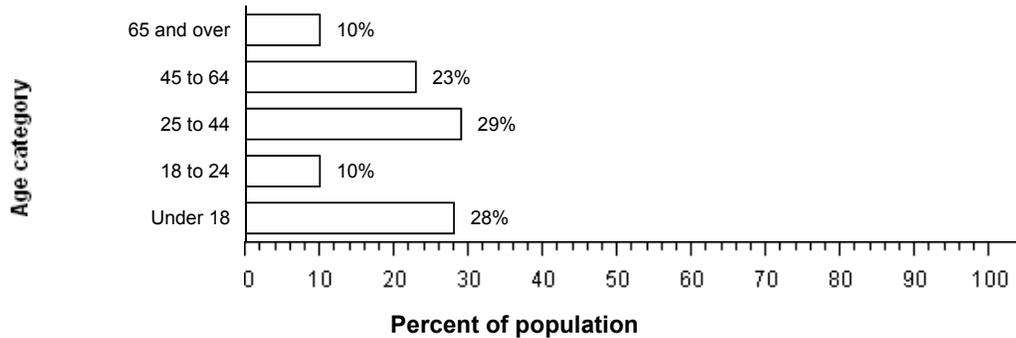


### Percent below poverty level

Source: American Community Survey, 2005-2009

POPULATION OF Texas: In 2005-2009, Texas had a total population of 23.8 million - 11.9 million (50 percent) females and 11.9 million (50 percent) males. The median age was 33 years. Twenty-eight percent of the population was under 18 years and 10 percent was 65 years and older.

**The Age Distribution of People in Texas in 2005-2009**

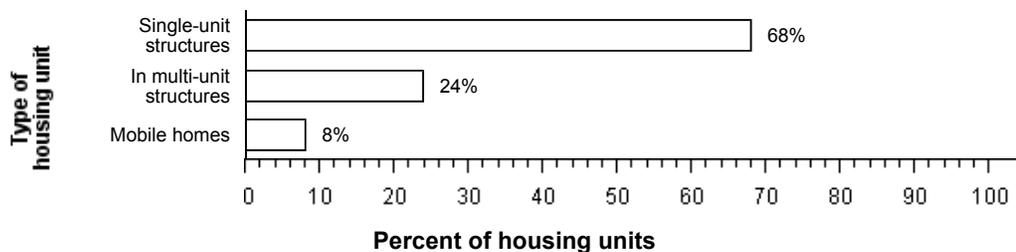


Source: American Community Survey, 2005-2009

For people reporting one race alone, 72 percent was White; 11 percent was Black or African American; 1 percent was American Indian and Alaska Native; 3 percent was Asian; less than 0.5 percent was Native Hawaiian and Other Pacific Islander, and 11 percent was Some other race. Two percent reported Two or more races. Thirty-six percent of the people in Texas was Hispanic. Forty-eight percent of the people in Texas was White non-Hispanic. People of Hispanic origin may be of any race.

HOUSING CHARACTERISTICS: In 2005-2009, Texas had a total of 9.4 million housing units, 12 percent of which were vacant. Of the total housing units, 68 percent was in single-unit structures, 24 percent was in multi-unit structures, and 8 percent was mobile homes. Thirty-three percent of the housing units were built since 1990.

**The Types of Housing Units in Texas in 2005-2009**

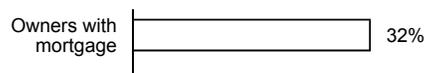


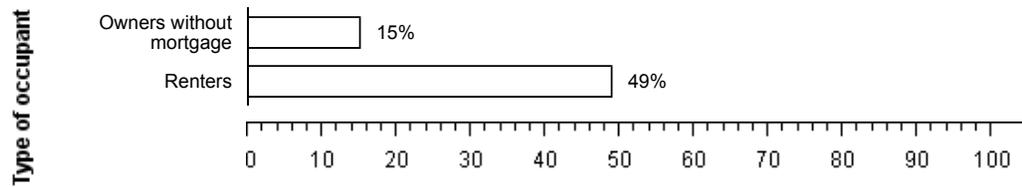
Source: American Community Survey, 2005-2009

OCCUPIED HOUSING UNIT CHARACTERISTICS: In 2005-2009, Texas had 8.3 million occupied housing units - 5.4 million (65 percent) owner occupied and 2.9 million (35 percent) renter occupied. Five percent of the households did not have telephone service and 6 percent of the households did not have access to a car, truck, or van for private use. Multi Vehicle households were not rare. Forty-one percent had two vehicles and another 18 percent had three or more.

HOUSING COSTS: The median monthly housing costs for mortgaged owners was \$1,379, nonmortgaged owners \$430, and renters \$761. Thirty-two percent of owners with mortgages, 15 percent of owners without mortgages, and 49 percent of renters in Texas spent 30 percent or more of household income on housing.

**Occupants with a Housing Cost Burden in Texas in 2005-2009**





**Percent paying 30 percent or more of income for housing**

Source: American Community Survey, 2005-2009

Source: U.S. Census Bureau, 2005-2009 American Community Survey

The U.S. Census Bureau's Population Estimates Program produces the [official population estimates for the nation, states, counties and places](#), and the [official estimates of housing units for states and counties](#). The population and housing characteristics included above are derived from the American Community Survey.

Notes:

- Detail may not add to totals due to rounding.
- Percentages are based on unrounded numbers.

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According to 10 C.F.R. § 2.1207(a)(3)(iii)**

**ATTACHMENT 2**

**Table 2. Number of Buildings and Total Consumption by Size of Building, 2003**

	<b>Total Buildings (thousand)</b>	<b>Percent of Buildings</b>	<b>Cumulative Percent of Buildings</b>	<b>Total Consump- tion (trillion Btu)</b>	<b>Percent of Consump- tion</b>	<b>Cumulative Percent of Consump- tion</b>
<b>Building Floorspace (square feet)</b>						
1,001 to 5,000	2,586	53.2	53.2	685	10.5	10.5
5,001 to 10,000	948	19.5	72.7	563	8.6	19.1
10,001 to 25,000	810	16.7	89.4	899	13.8	32.9
25,001 to 50,000	261	5.4	94.8	742	11.4	44.3
50,001 to 100,000	147	3.0	97.8	913	14.0	58.3
100,001 to 200,000	74	1.5	99.3	1,064	16.3	74.6
200,001 to 500,000	26	0.5	99.9	751	11.5	86.1
Over 500,000	8	0.2	100.0	906	13.9	100.0

Source: Energy Information Administration, 2003 Commercial Buildings Energy Consumption Survey.

**Table 3. Number of Buildings, Amount of Floorspace, Mean Building Size, and Total Consumption by Year Constructed, 2003**

	<b>Total Buildings (thousand)</b>	<b>Percent of Buildings</b>	<b>Total Floor- space (million square feet)</b>	<b>Percent of Floor- space</b>	<b>Mean Size (square feet per building)</b>	<b>Total Consump- tion (trillion Btu)</b>	<b>Percent of Consump- tion</b>
<b>Year Constructed</b>							
Before 1920	333	6.9	3,784	5.3	11,400	303	4.7
1920 to 1945	536	11.0	6,985	9.8	13,000	631	9.7
1946 to 1959	573	11.8	7,262	10.1	12,700	588	9.0
1960 to 1969	600	12.4	8,641	12.1	14,400	791	12.1
1970 to 1979	784	16.1	12,275	17.1	15,600	1,191	18.3
1980 to 1989	768	15.8	12,468	17.4	16,200	1,247	19.1
1990 to 1999	917	18.9	13,981	19.5	15,200	1,262	19.4
2000 to 2003	347	7.1	6,262	8.7	18,100	511	7.8
<b>Year Constructed (combined categories)</b>							
Before 1970	2,042	42.0	26,672	37.2	13,100	2,313	35.5
1970 to 2003	2,817	58.0	44,986	62.8	16,000	4,211	64.5

Source: Energy Information Administration, 2003 Commercial Buildings Energy Consumption Survey.

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According to 10 C.F.R. § 2.1207(a)(3)(iii)**

**ATTACHMENT 3**

**2.2.5 Characteristics of U.S. Housing by Vintage, as of 2005**

<u>Vintage</u>	Share of <u>US Housing Stock</u>	Average Home Size (square feet) (1)		
		<u>Single Family</u>	<u>Multi-Family</u>	<u>Mobile Home</u>
Prior to 1950	20%	2,677	1,021	775
1950 to 1969	23%	2,433	927	775
1970 to 1979	17%	2,666	869	948
1980 to 1989	17%	2,853	909	1,008
1990 to 1999	16%	3,366	940	1,245
2000 to 2005	8%	3,680	1,047	1,425
<b>Total U.S. Homes (millions)</b>	111.1	<b>U.S. Average</b> 2,838	941	1,062

Note(s): 1) Average home sizes include both heated and unheated floor space, including garages.

Source(s): EIA, A Look at Residential Energy Consumption in 2005, July 2008.

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According to 10 C.F.R. § 2.1207(a)(3)(iii)**

**ATTACHMENT 4**

**2.2.1 Total Number of Households and Buildings, Floorspace, and Household Size, by Year**

	Households (millions)	Percent Post- 2000 Households (1)	Floorspace (billion SF)	U.S. Population (millions)	Average Household Size (2)
1980	80	N.A.	142	227	2.9
1981	83	N.A.	N.A.	229	2.8
1982	84	N.A.	N.A.	232	2.8
1983	85	N.A.	N.A.	234	2.8
1984	86	N.A.	144	236	2.7
1985	88	N.A.	N.A.	238	2.7
1986	89	N.A.	N.A.	240	2.7
1987	91	N.A.	157	242	2.7
1988	92	N.A.	N.A.	244	2.7
1989	93	N.A.	N.A.	247	2.6
1990	94	N.A.	169	250	2.6
1991	95	N.A.	N.A.	253	2.7
1992	96	N.A.	N.A.	257	2.7
1993	98	N.A.	N.A.	260	2.7
1994	99	N.A.	N.A.	263	2.7
1995	99	N.A.	N.A.	266	2.7
1996	101	N.A.	N.A.	269	2.7
1997	102	N.A.	169	273	2.7
1998	104	N.A.	N.A.	276	2.7
1999	105	N.A.	N.A.	279	2.7
2000	106	N.A.	N.A.	282	2.7
2001	107	2%	203	285	2.7
2002	105	3%	N.A.	288	2.7
2003	106	5%	N.A.	291	2.8
2004	107	7%	N.A.	294	2.8
2005	108	9%	256	297	2.7
2006	110	11%	N.A.	299	2.7
2007	110	12%	N.A.	301	2.7
2008	113	13%	N.A.	304	2.7
2009	113	13%	N.A.	306	2.7
2010	115	13%	N.A.	309	2.7
2011	116	14%	N.A.	312	2.7
2012	117	16%	N.A.	314	2.7
2013	119	17%	N.A.	317	2.7
2014	120	18%	N.A.	320	2.7
2015	121	20%	N.A.	322	2.7
2016	123	21%	N.A.	325	2.6
2017	124	22%	N.A.	328	2.6
2018	125	23%	N.A.	330	2.6
2019	127	25%	N.A.	333	2.6
2020	128	26%	N.A.	336	2.6
2021	129	27%	N.A.	338	2.6
2022	131	28%	N.A.	341	2.6
2023	132	30%	N.A.	344	2.6
2024	133	31%	N.A.	347	2.6
2025	135	32%	N.A.	349	2.6
2026	136	33%	N.A.	352	2.6
2027	137	34%	N.A.	355	2.6
2028	139	35%	N.A.	358	2.6
2029	140	36%	N.A.	361	2.6
2030	141	37%	N.A.	364	2.6

Note(s): 1) Percent built after Dec. 31, 2000. 2) Number of residents. 3) Number of buildings and floorspace in 1997; for comparison, 1997 households = 101.5 million; percentage of floorspace: 85% single-family, 11% multi-family, and 4% manufactured housing. 2001 households = 107.2 million; percentage of floorspace: 83% single-family, 13% multi-family, and 4% manufactured housing.

Source(s): DOC, Statistical Abstract of the U.S. 2008, Oct. 2007, No. 948, p. 626, 1980-2000 households, No. 2-3, p. 7-8 for population; EIA, Annual Energy Outlook 2011 Early Release, Dec. 2010, Table A4, p. 9-10 for 2005-2030 households and Table A19, p. 37-38 for housing starts; EIA, Buildings and Energy in the 1980's, June 1995, Table 2.1, p. 23 for residential buildings and floorspace in 1980 and 1990; EIA, 1997 Residential Energy Consumption Survey for 1997 buildings and floorspace; EIA, 2001 Residential Energy Consumption Survey for 2001 households and floorspace; and EIA, 2005 Residential Energy Consumption Survey for

residential energy consumption survey for 2007 residential and nonresidential, and EIA, 2006 Residential Energy Consumption Survey for 2005 floorspace.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

_____ )	
In the Matter of )	Docket Nos. 52-012-COL
)	52-013-COL
NUCLEAR INNOVATION NORTH AMERICA LLC )	
)	
(South Texas Project Units 3 and 4) )	July 12, 2011
_____ )	

**NUCLEAR INNOVATION NORTH AMERICA LLC'S**  
**PROPOSED QUESTIONS FOR THE BOARD ON NRC STAFF'S DIRECT**  
**TESTIMONY OF DANIEL C. MUSSATTI AND DR. MICHAEL J. SCOTT RELATED**  
**TO CONTENTION DEIS-1-G**

Pursuant to 10 C.F.R. § 2.1207(a)(3), the U.S. Nuclear Regulatory Commission ("NRC") Atomic Safety and Licensing Board's ("Board's") Scheduling Order dated March 11, 2011, and the Board's Initial Scheduling Order dated October 20, 2009, Applicant Nuclear Innovation North America LLC ("NINA") hereby submits its proposed questions for the Board to consider propounding to Mr. Daniel C. Mussatti and Dr. Michael J. Scott at the evidentiary hearing regarding Contention DEIS-1-G. These questions are based on Mr. Mussatti's and Dr. Scott's direct testimony filed on May 9, 2011, related to Contention DEIS-1-G.

Following the Board's guidelines for submittals of proposed questions for the Board to ask direct and rebuttal witnesses, this submittal provides a brief description of the issues that NINA contends need further examination, the objective of the examination, and the proposed line of questioning that may logically lead to achieving the objective.<sup>1</sup>

<sup>1</sup> See Initial Scheduling Order, at 16 (Oct. 20, 2009).

**I. USE OF ELECTRIC RELIABILITY COUNCIL OF TEXAS (“ERCOT”) DATA FOR IDENTIFYING THE SAVINGS IN PEAK DEMAND**

**A. Brief Description of the Issue**

Did the American Council for an Energy Efficient Economy (“ACEEE”) Report use Electric Reliability Council of Texas (“ERCOT”) data or U.S. Energy Information Administration (“EIA”) data to identify the savings in peak demand?

**B. References**

Mussatti/Scott Direct Testimony (Exh. NRC000031) at 38.

**C. Objective of the Examination**

Demonstrate that the ACEEE Report used ERCOT data, not EIA data, to identify the savings in peak demand.

**D. Proposed Line of Questioning**

- Mr. Mussatti and Dr. Scott, page 38 of your direct testimony on Contention DEIS-1-G states that the ACEEE Report used EIA data.
  - I would like to refer you to page 6 of the ACEEE Report (Exhibit STP000008).  
Does the top paragraph of that page state that the EIA data was used to determine the amount of consumption in the ERCOT region?
  - Do you agree that page 7 of the ACEEE Report states that ERCOT data was used for the reference case to identify the amount of savings in peak demand?
- Do you also agree that ERCOT peak demand forecasts account for transmission losses?

**Confidential Pending Release by the Licensing Board  
According to 10 C.F.R. § 2.1207(a)(3)(iii)**

Respectfully submitted,

*Signed (electronically) by Steven P. Frantz*

Steven P. Frantz

John E. Matthews

Stephen J. Burdick

Charles B. Moldenhauer

Morgan, Lewis & Bockius LLP

1111 Pennsylvania Avenue, N.W.

Washington, D.C. 20004

Phone: 202-739-3000

Fax: 202-739-3001

E-mail: sfrantz@morganlewis.com

*Counsel for Nuclear Innovation North America LLC*

Dated in Washington, D.C.  
this 12th day of July 2011

Question - Appendix C.1 of STP000008 addresses residential efficiency. Is that correct?

Question - ~~Please read the~~ Does the last sentence of the second paragraph of page 52 of STP000008 state that Appendix A provides the total achievable electricity savings in Texas for residential efficiency?

Question - Appendix C.2 of STP000008 addresses commercial efficiency. Is that correct?

Question - Does the last sentence of the last paragraph on page 56 of STP000008 state that Appendix A provides the total achievable electricity savings in Texas for commercial efficiency?

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter of )  
)  
NUCLEAR INNOVATION NORTH AMERICA LLC ) Docket Nos. 52-012-COL and 52-013-COL  
(NINA) )  
)  
(South Texas Project Units 3 and 4) )  
)

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing **MEMORANDUM AND ORDER (Providing Proposed Questions for Evidentiary Hearing on Contention DEIS-1-G)** have been served upon the following persons by the Electronic Information Exchange.

Atomic Safety and Licensing Board Panel  
U.S. Nuclear Regulatory Commission  
Mail Stop: T-3F23  
Washington, DC 20555-0001

Office of the General Counsel  
U.S. Nuclear Regulatory Commission  
Mail Stop - O-15 D21  
Washington, DC 20555-0001

Michael M. Gibson, Chair  
Administrative Judge  
E-mail: [michael.gibson@nrc.gov](mailto:michael.gibson@nrc.gov)

Marian Zabler, Esq.  
Sara Kirkwood, Esq.  
Maxwell Smith, Esq.  
Michael Spencer, Esq.  
Jody Martin, Esq.  
Anthony C. Wilson, Esq.  
Andrea Silvia, Esq.  
Anita Ghosh, Esq.  
Joseph Gilman, Paralegal  
E-mail:  
[marian.zabler@nrc.gov](mailto:marian.zabler@nrc.gov)  
[sara.kirkwood@nrc.gov](mailto:sara.kirkwood@nrc.gov)  
[joseph.gilman@nrc.gov](mailto:joseph.gilman@nrc.gov)  
[maxwell.smith@nrc.gov](mailto:maxwell.smith@nrc.gov)  
[michael.spencer@nrc.gov](mailto:michael.spencer@nrc.gov)  
[jody.martin@nrc.gov](mailto:jody.martin@nrc.gov)  
[anthony.wilson@nrc.gov](mailto:anthony.wilson@nrc.gov)  
[andrea.silvia@nrc.gov](mailto:andrea.silvia@nrc.gov)  
[anita.ghosh@nrc.gov](mailto:anita.ghosh@nrc.gov)

Gary S. Arnold  
Administrative Judge  
E-mail: [gary.arnold@nrc.gov](mailto:gary.arnold@nrc.gov)

Randall J. Charbeneau  
Administrative Judge  
E-mail: [Randall.Charbeneau@nrc.gov](mailto:Randall.Charbeneau@nrc.gov)

Jonathan C. Esser, Law Clerk  
E-mail: [jonathan.esser@nrc.gov](mailto:jonathan.esser@nrc.gov)

OGC Mail Center :  
[OGCMailCenter@nrc.gov](mailto:OGCMailCenter@nrc.gov)

Docket Nos. 52-012-COL and 52-013-COL

**MEMORANDUM AND ORDER (Providing Proposed Questions for Evidentiary Hearing on Contention DEIS-1-G)**

Office of Commission Appellate  
Adjudication  
U.S. Nuclear Regulatory Commission  
Mail Stop: O-16C1  
Washington, DC 20555-0001  
E-mail: [ocaamail@nrc.gov](mailto:ocaamail@nrc.gov)

Morgan, Lewis & Bockius, LLP  
1111 Pennsylvania Ave., NW  
Washington, DC 20004  
Counsel for the Applicant  
Stephen J. Burdick, Esq.  
Steven P. Frantz, Esq.  
Alvin Gutterman, Esq.  
John E. Matthews, Esq.  
Kathryn M. Sutton, Esq.  
Charles B. Moldenhauer, Esq.  
Mary Freeze, Assistant  
E-mail:  
[sburdick@morganlewis.com](mailto:sburdick@morganlewis.com)  
[sfrantz@morganlewis.com](mailto:sfrantz@morganlewis.com);  
[agutterman@morganlewis.com](mailto:agutterman@morganlewis.com)  
[jmatthews@morganlewis.com](mailto:jmatthews@morganlewis.com)  
[ksutton@morganlewis.com](mailto:ksutton@morganlewis.com)  
[cmoldenhauer@morganlewis.com](mailto:cmoldenhauer@morganlewis.com)  
[mfreeze@morganlewis.com](mailto:mfreeze@morganlewis.com)

Sustainable Energy and Economic  
Development (SEED) Coalition  
Robert V. Eye, Esq.  
Brett A. Jarmer, Esq.  
April Middleton, Assistant  
Kauffman & Eye  
112 SW 6<sup>th</sup> Avenue, Suite 202  
Topeka, Kansas 66603  
E-mail: [bob@kauffmaneye.com](mailto:bob@kauffmaneye.com)  
E-mail: [brett@kauffmaneye.com](mailto:brett@kauffmaneye.com)  
E-mail: [april@kauffmaneye.com](mailto:april@kauffmaneye.com)

Office of the Secretary of the  
Commission  
U.S. Nuclear Regulatory Commission  
Mail Stop: O-16C1  
Washington, DC 20555-0001  
Hearing Docket  
E-mail: [hearingdocket@nrc.gov](mailto:hearingdocket@nrc.gov)

Sustainable Energy and Economic  
Development (SEED) Coalition  
Diane Curran  
Harmon, Curran, Spielberg, &  
Eisenberg, LLP  
1726 M Street N.W., Suite 600  
Washington, DC 20036  
E-mail: [dcurran@harmoncurran.com](mailto:dcurran@harmoncurran.com)

Sustainable Energy & Economic  
Development (SEED) Coalition  
Eliza Brown, Clean Energy Advocate  
1303 San Antonio #100  
Austin, Texas 78701  
E-mail: [eliza.seedcoalition@gmail.com](mailto:eliza.seedcoalition@gmail.com)

Docket Nos. 52-012-COL and 52-013-COL

**MEMORANDUM AND ORDER (Providing Proposed Questions for  
Evidentiary Hearing on Contention DEIS-1-G)**

Southwest Workers' Union  
Lanny Alan Sinkin, Esq.  
1801 Westlake Drive #212  
Austin, Texas 78746  
E-mail: [lanny.sinkin@gmail.com](mailto:lanny.sinkin@gmail.com)

[Original signed by Nancy Greathead]  
Office of the Secretary of the Commission

Dated at Rockville, Maryland  
this 29<sup>th</sup> day of February 2012