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)	)	May 9, 2011

NUCLEAR INNOVATION NORTH AMERICA LLC'S
INITIAL STATEMENT OF POSITION ON CONTENTION DEIS-1-G

Pursuant to 10 C.F.R. § 2.1207(a)(1), 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")[1] hereby submits its Initial Statement of Position on Contention DEIS-1-G regarding whether the Draft Environmental Impact Statement ("DEIS") for STP Units 3 and 4 failed to account for a reduction in peak power demand of 2,362 MW by 2023 due to the adoption of new Texas energy efficient building code rules. This Initial Statement of Position is supported by the direct testimony from Mr. Adrian Pieniazek and exhibits submitted with this Initial Statement of Position.[2] For the reasons set forth below, Contention DEIS-1-G should be resolved in favor of NINA.

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1 The original lead applicant for South Texas Project ("STP") Units 3 and 4 was the STP Nuclear Operating Company ("STPNOC"). NINA became the lead applicant in early 2011. This Initial Statement of Position refers to both NINA and STPNOC as the "Applicant."

2 *See* Direct Testimony of Applicant Witness Adrian Pieniazek Regarding Contention DEIS-1-G ("Pieniazek Direct Testimony") (Exh. STP000001).

I. INTRODUCTION

As admitted by the Board, Contention DEIS-1-G alleges that the "NRC Staff's DEIS analysis of the need for power is incomplete because it fails to account for reduced demand caused by the adoption of an energy efficient building code in Texas, the implementation of which could significantly reduce peak demand in the [Electricity Reliability Council of Texas ("ERCOT")] region."[3]

The record in this proceeding, including the Pieniazek Direct Testimony and exhibits accompanying this Initial Statement of Position, demonstrates that (1) Contention DEIS-1-G should be dismissed as moot, because the Final Environmental Impact Statement ("FEIS") accounts for the new energy efficient building code; (2) consideration of the energy efficient building code in the FEIS complies with the National Environmental Policy Act ("NEPA"); (3) the report cited by the Intervenors[4] does not support their contention that 2,362 MW can be saved by 2023 through the new energy efficient building code; and (4) even if the value of 2,362 MW is used to reduce the need for power projections in 2023, there is still a need for power from STP Units 3 and 4.

Following this introductory section, Section II of this Initial Statement of Position outlines the procedural history of this proceeding. Section III presents the legal standards governing contested proceedings on NEPA issues, specifically need for power assessments, and the law governing mootness. Section IV provides a background on NINA's witness and an overview of his testimony. Section V provides the bases for NINA's position that there is a need

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[3] *Nuclear Innovation North America LLC* (South Texas Project Units 3 and 4), LBP-11-07, 73 NRC __, slip op. at 48 (Feb. 28, 2011).

[4] The "Intervenors" are the Sustainable Energy and Economic Development Coalition, Susan Dancer, the South Texas Association for Responsible Energy, Daniel A. Hickl, Public Citizen, and Bill Wagner.

for power from STP Units 3 and 4, even when the impact of the new energy efficient building code is taken into account. Section VI provides NINA's conclusions.

II. PROCEDURAL BACKGROUND

On September 20, 2007, STPNOC submitted an application to the NRC for combined licenses ("COLs") for STP Units 3 and 4.[5] The Intervenors filed a "Petition for Intervention and Request for Hearing" ("Petition") on April 21, 2009. The Petition included proposed contentions on need for power and energy efficiency, but all of them were rejected by the Board.[6] The Board admitted a few contentions on other topics.[7]

The NRC Staff issued the DEIS for STP Units 3 and 4 in March 2010.[8] The Staff's preliminary recommendation from an environmental perspective was that the COLs for STP Units 3 and 4 should be issued.[9] On May 19, 2010, the Intervenors proffered six new contentions (Contentions DEIS-1 through DEIS-6) that alleged various inadequacies in the NRC Staff's DEIS for STP Units 3 and 4.[10] The new contentions were supported by comments on the DEIS from Mr. David Power ("Power Comments").

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5 South Texas Project Nuclear Operating Company; Notice of Receipt and Availability of Application for a Combined License, 72 Fed. Reg. 60,394, 60,394 (Oct. 24, 2007). Chapter 8 of the Environmental Report ("ER") for the COL application is provided as Exh. STP000003.

6 *South Texas Project Nuclear Operating Co.* (South Texas Project Units 3 & 4), LBP-09-21, 70 NRC 581, 622-27, 631-34 (2009).

7 *See generally South Texas Project Nuclear Operating Co.* (South Texas Project Units 3 & 4), LBP-09-25, 70 NRC 867, 880-83 (2009); *South Texas Project*, LBP-09-21, 70 NRC at 638.

8 NUREG-1937, Draft Environmental Impact Statement for Combined Licenses (COLs) for South Texas Project Electric Generating Station Units 3 and 4, Draft Report for Comment, Vols. 1 & 2 (Mar. 2010), *available at* ADAMS Accession Nos. ML100700327 and ML100700333 ("DEIS").

9 *Id.* at 10-27.

10 Intervenors' Motion for Leave to File New Contentions Based on the Draft Environmental Impact Statement (May 19, 2010) ("Motion").

Contention DEIS-1 challenged the DEIS evaluation of the need for power for STP Units 3 and 4.[11] Contention DEIS-1 included eight independent bases (labeled A through H) that generally alleged that the DEIS need for power analysis either did not account for efforts to reduce demand or did not account for power obtained from other generating sources.

The Board rejected Contentions DEIS-2 through DEIS-6, but admitted one subpart of Contention DEIS-1.[12] In ruling on the admissibility of Contention DEIS-1, the Board rejected seven of the eight bases submitted by the Intervenors, finding only DEIS-1-G admissible.[13] The Board took notice that Texas recently adopted energy efficient building code rules,[14] and concluded that Contention DEIS-1-G raises a genuine dispute of material fact as to whether the need for power assessment failed to consider the new energy efficient building code that, according to the Intervenors, could allegedly save 2,362 MW of peak power demand by 2023.[15] For these reasons, the Board admitted Contention DEIS-1-G.

As admitted, Contention DEIS-1-G is narrow in scope; it is limited *only* to demand reductions based upon the adoption of the new energy efficient building code in Texas. This

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11 *Id.* at 2-5.

12 *South Texas Project*, LBP-11-07, slip op. at 74.

13 *Id.* at 30-56.

14 The new Texas energy efficient building code rules (34 Tex. Admin. Code § 19.53), adopted on June 4, 2010, are titled "Building Energy Efficiency Performance Standards," and state:

> (a) Single-family residential construction. Effective January 1, 2012, the energy efficiency provisions of the International Residential Code as they existed on May 1, 2009, are adopted as the energy code in this state for single-family residential construction as it is defined in Health and Safety Code, § 388.002(12).
>
> (b) All other residential, commercial, and industrial construction. Effective April 1, 2011, the International Energy Conservation Code as it existed on May 1, 2009, is adopted as the energy code for use in this state for all residential, commercial, and industrial construction that is not single-family residential construction under subsection (a) of this section.

15 *South Texas Project*, LBP-11-07, slip op. at 46.

scope does not include the other bases rejected by the Board, such as the amount of generating capacity available or the overall ERCOT demand forecasts.

III. LEGAL STANDARDS

A. Law Governing Contested Hearings on NEPA Issues

The Board reviews contested issues *de novo*, applying the same substantive standard applicable to the NRC Staff's NEPA review. According to the Commission: "[W]hen resolving contentions litigated through the adversary process, [boards must] bring their own '*de novo*' judgment to bear. In such cases, boards must decide, based on governing regulatory standards and the evidence submitted, whether the applicant has met its burden of proof (except where the NRC Staff has the burden)."[16]

An applicant generally has the burden of proof in a licensing proceeding.[17] In cases involving NEPA contentions, the burden shifts to the NRC Staff, because the NRC Staff, not the Applicant, has the burden of complying with NEPA.[18] However, because "the Staff, as a practical matter, relies heavily upon the Applicant's ER in preparing the [Environmental Impact Statement ("EIS")], should the Applicant become a proponent of a particular challenged position set forth in the EIS, the Applicant, as such a proponent, also has the burden on that matter."[19]

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16 *Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-05-17, 62 NRC 5, 39 (2005).

17 10 C.F.R. § 2.325.

18 *See, e.g.*, *Duke Power Co.* (Catawba Nuclear Station, Units 1 & 2), CLI-83-19, 17 NRC 1041, 1049 (1983).

19 *La. Energy Servs., L.P.* (Claiborne Enrichment Center), LBP-96-25, 44 NRC 331, 338-39 (1996) (citing *Pub. Serv. Co. of N.H.* (Seabrook Station, Units 1 & 2), ALAB-471, 7 NRC 477, 489 n.8 (1978), *rev'd on other grounds*, CLI-97-15, 46 NRC 294 (1997).

B. NEPA Standards Governing Need for Power Assessments

1. Environmental Impacts Under NEPA

Contention DEIS-1-G raises environmental issues under NEPA. NEPA requires that federal agencies, such as the NRC, prepare an EIS for "major Federal actions significantly affecting the quality of the human environment."[20] NEPA does not mandate substantive results; rather, it imposes procedural restraints on agencies, requiring them to take a "hard look" at the environmental impacts of a proposed action and reasonable alternatives to that action.[21]

This "hard look" is subject to the "rule of reason."[22] This means that an "agency's environmental review, rather than addressing every impact that could possibly result, need only account for those that have some likelihood of occurring or are reasonably foreseeable."[23] Consideration of "remote and speculative" or "inconsequentially small" impacts is not required.[24] As the Commission explained, "NEPA also does not call for certainty or precision, but an *estimate* of anticipated (not unduly speculative) impacts."[25] When faced with uncertainty, NEPA only requires "reasonable forecasting."[26] Similarly, the U.S. Supreme Court has held that NEPA does not require a "worst case analysis."[27]

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20 42 U.S.C. § 4332(2)(C) (2006).

21 *See La. Energy Servs., L.P.* (Claiborne Enrichment Ctr.), CLI-98-3, 47 NRC 77, 87-88 (1998); *see also Balt. Gas & Elec. Co. v. NRDC*, 462 U.S. 87, 97-98 (1983) (holding that NEPA requires agencies to take a "hard look" at environmental consequences prior to taking major actions).

22 *La. Energy Servs., L.P.* (Nat'l Enrichment Facility), LBP-06-8, 63 NRC 241, 258-59 (2006) (citing *Long Island Lighting Co.* (Shoreham Nuclear Power Station), ALAB-156, 6 AEC 831, 836 (1973)); *see also Dep't of Transp. v. Pub. Citizen*, 541 U.S. 752, 767-69 (2004) (stating that the rule of reason is inherent in NEPA and its implementing regulations).

23 *Nat'l Enrichment*, LBP-06-8, 63 NRC at 258-59 (citing *Shoreham*, ALAB-156, 6 AEC at 836).

24 *See Vt. Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), ALAB-919, 30 NRC 29, 44 (1989) (citing *Limerick Ecology Action, Inc. v. NRC*, 869 F.2d 719, 739 (3d Cir. 1989)).

25 *La. Energy Servs. L.P.* (Nat'l Enrichment Facility), CLI-05-20, 62 NRC 523, 536 (2005).

26 *Scientists' Inst. for Pub. Info., Inc. v. AEC*, 481 F.2d 1079, 1092 (D.C. Cir. 1973).

27 *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 354-55, 359 (1989).

2. Need for Power Analysis

Under 10 C.F.R. § 51.71(d), the DEIS must include a need for power analysis as part of its consideration of the "economic, technical, and other benefits and costs of the proposed action." NEPA requires federal agencies to balance the environmental costs against the anticipated benefits of a proposed action. Specifically, 10 C.F.R. § 51.107(a)(3) requires a "weighing [of] the environmental, economic, technical, and other benefits against environmental and other costs." Therefore, as part of the NRC's NEPA analysis for licensing a nuclear power plant, the agency considers need for power as a benefit from the plant.

As the Commission explained in a 2003 denial of a rulemaking petition in which it discussed the need for power inquiry at some length:

> The need for power must be addressed in connection with new power plant construction so that the NRC may weigh the likely benefits (e.g., electrical power) against the environmental impacts of constructing and operating a nuclear power reactor. The Commission emphasizes, however, that such an assessment should not involve burdensome attempts to precisely identify future conditions. Rather, it should be sufficient to reasonably characterize the costs and benefits associated with proposed licensing actions.[28]

The Commission further explained that, while NEPA requires the agency to perform a "reasonable assessment" of the need for power, "the NRC does not supplant the States, which have traditionally been responsible for assessing the need for power from generating facilities, their economic feasibility and for regulating rates and services."[29]

C. Law Governing Mootness

The Commission has held: "[W]here a contention is 'superseded by the subsequent issuance of licensing-related documents'—whether a draft EIS or an applicant's response to a

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[28] Nuclear Energy Institute; Denial of Petition for Rulemaking, 68 Fed. Reg. 55,905, 55,910 (Sept. 29, 2003).

[29] *Id.* at 55,909.

request for additional information—the contention *must* be disposed of or modified."[30] Based on this established legal principle, the Commission made clear that "resolution of the *mooted* contention requires *no more than* a finding by the presiding officer that the matter has become moot."[31] In the *Louisiana Energy Services* proceeding, the licensing board dismissed portions of two environmental contentions as moot *in its partial initial decision* on admitted NEPA contentions, finding that the omissions alleged by the intervenors had been cured.[32] The *LES* licensing board found that the Staff supplied the necessary information after one of the contentions was admitted, and therefore concluded that "the omission alleged in this contention has been cured, and [that] the DEIS [was] no longer defective in the alleged respect."[33]

IV. NINA'S WITNESS

NINA's Direct Testimony on Contention DEIS-1-G is presented by Mr. Adrian Pieniazek, the Director of Market Policy for NRG Energy, Inc. ("NRG Energy").[34] He has more than 27 years of experience in the energy industry and has been in his current position since 2003. Currently, Mr. Pieniazek represents NRG Energy's interests at ERCOT and the Public Utility Commission of Texas ("PUCT"), as well as providing analysis and policy recommendations to numerous NRG Energy business units, with a specific emphasis on wholesale electricity market design issues. Prior to his current position, Mr. Pieniazek was the Director of Asset Management for Reliant Energy, Inc. in Texas. Prior to that, he served as the

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30 *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-28, 56 NRC 373, 382 (2002) (emphasis added) (citing *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 NRC 1041, 1050 (1983)).

31 *USEC, Inc.* (Am. Centrifuge Plant), CLI-06-9, 63 NRC 433, 444-45 (2006) (emphasis added).

32 *La. Energy Servs., L.P.* (Nat'l Enrichment Facility), LBP-05-13, 61 NRC 385, 410-11, 424-26 (2005), *aff'd*, CLI-05-28, 62 NRC 721, 723 (2005).

33 *Id*. at 411.

34 NRG Energy is an owner of NINA. Mr. Pieniazek's testimony is provided as Exh. STP000002.

Director of Generation Planning for City Public Service Board ("CPS Energy"), the municipal power utility serving San Antonio, Texas.[35]

Mr. Pieniazek testifies that consideration of the new energy efficient building code does not change the conclusion that there is a need for power from STP Units 3 and 4. He first provides a brief background on ERCOT's overall purpose and analyses. Next, Mr. Pieniazek evaluates the report published by the American Council for an Energy-Efficient Economy ("ACEEE"), titled "Potential for Efficiency, Demand Response, and Onsite Renewable Energy to Meet Texas's Growing Electricity Needs" ("ACEEE Report"),[36] that provides the basis for Contention DEIS-1-G. Mr. Pieniazek discusses why that document does not support Intervenors' position that 2,362 MW of peak load or baseload power can be saved in the ERCOT region by 2023, and that the actual amount of demand reduction that can be attributed to the ACEEE Report is far less. Finally, Mr. Pieniazek discusses the impact of the energy efficient building code on the need for power from STP Units 3 and 4. On this point, he concludes that even assuming an additional reduction in peak demand of 2,362 MW in 2023, a need for power from STP Units 3 and 4 remains.

Through the attached Pieniazek Direct Testimony and supporting exhibits, NINA's expert witness demonstrates that there is a need for power from STP Units 3 and 4, even accounting for the impact of the new energy efficient building code.

V. INITIAL STATEMENT OF POSITION

A. Contention DEIS-1-G Is Moot

Contention DEIS-1-G alleged that DEIS Chapter 8 failed to account for the reduced demand that could result from the implementation of the proposed Texas energy efficient

[35] Pieniazek Direct Testimony, at Q3.

[36] Exh. STP000008.

building code rules, which were adopted on June 4, 2010 after issuance of the DEIS.[37] The Board admitted this "contention of omission," and concluded that the "DEIS analysis of the need for power is incomplete because it *fails to account* for reduced demand caused by the adoption of an energy efficient building code in Texas, the implementation of which could significantly reduce peak demand in the ERCOT region."[38] Therefore, as admitted by the Board, Contention DEIS-1-G is a contention of omission regarding the failure of the DEIS to account for demand reductions due to the adoption of the new energy efficient building code rules.

At about the same time that the Board issued LBP-11-07 admitting Contention DEIS-1-G, the NRC Staff issued the FEIS.[39] Unlike the DEIS, however, the FEIS evaluates the impact of the adoption of the energy efficient building code by Texas. For example, FEIS Section 8.2 states that Texas "adopted rules implementing the 2009 International Energy Conservation Code and 2009 International Residential Code as the basis for building codes for single family and other residential housing throughout the State, effective April 1, 2011 and January 1, 2012, respectively."[40] With respect to demand reduction from the energy efficient building code, FEIS Section 8.3 also states:

> Enhanced funding of energy conservation and regulatory actions, such as the new residential building codes adopted by the State and several municipalities within the State, may not be fully captured by the 2010 ERCOT forecast. However, new energy codes have been adopted continuously by Texas municipalities during the 2000-2010 period ahead of statewide actions in 2010 and much of their impact would have been included in the ERCOT forecast. For example, most of the large [cities] had adopted the 2006 or even the 2009 version of the International Energy Conservation Code before the State did (Energy Systems Laboratory 2010). The

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37 *See* Motion at 4.

38 *South Texas Project*, LBP-11-07, slip op. at 48 (emphasis added).

39 Exhs. NRC00003A to NRC00003D.

40 Exh. NRC00003C, at 8-18.

> corresponding electricity savings would have been reflected in the trend in electricity consumption during the period that formed the basis for ERCOT's forecast. There is almost no currently available, reliable information that suggests the impacts of the latest statewide code adoption, ARRA-funded projects, or other very recent programs have been significant on a statewide basis or that they require a significant adjustment to the ERCOT forecasts.[41]

Therefore, the FEIS identifies the energy efficient building code and considers its impact on projected demands.

The NRC Staff also conducted a sensitivity test in the FEIS of the need for power evaluation to account for recent developments that may affect the underlying ERCOT forecasts.[42] As part of the sensitivity test, the NRC Staff reduced the 2010 ERCOT firm load forecast to account for various new Texas energy efficiency programs, which would include the new energy efficient building code identified by the Intervenors.[43] The FEIS increased ERCOT's current energy efficiency adjustment (242 MW) by 5% of the change in cumulative growth from 2010 to 2012 in the ERCOT forecast and by 10% in and after 2013.[44] Accounting for this reduction in demand due to energy efficiency and retirements of plants that are older than 50 years, the FEIS concludes that there is a need for 6,400 MW of baseload power in 2020, which is greater than the output from two new nuclear units.[45] Thus, the FEIS accounts for uncertainties in future demand reductions due to energy efficiency, including the new energy efficient building code, and still finds a need for STP Units 3 and 4.[46]

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41 Exh. NRC00003C, at 8-26.

42 Exh. NRC00003C, at 8-25 to -28; Pieniazek Direct Testimony, at Q15.

43 Exh. NRC00003C, at 8-25 to -28; Pieniazek Direct Testimony, at Q20.

44 Exh. NRC00003C, at 8-25 to -26; Pieniazek Direct Testimony, at Q20.

45 Exh. NRC00003C, at 8-27.

46 Pieniazek Direct Testimony, at 24.

In addition to the above consideration of the energy efficient building code in FEIS Chapter 8, the FEIS also considers comments on the DEIS alleging that the DEIS did not account for the ACEEE Report and reductions due to the energy efficient building code.[47] In responding to these comments, the FEIS states:

> *Over the very long term (20 to 30 years), a new building code could be effective in reducing electricity consumption due to heating, cooling, and to some extent, lighting. Some of the potential savings would be in end uses such as lighting that are also being targeted by utility programs and municipal programs, so it is important not to double count. There are additional reasons to consider ACEEE projection speculative. The first is that in Texas, code adoption and enforcement occurs at a local level, and as noted by the commenter, many jurisdictions do so before the state updates its statewide standard. Many of the large metropolitan code-enforcing jurisdictions in Texas already had adopted the 2003, 2004, 2006, or 2009 model standards even though the statewide standard was the 2000 version (Energy Systems Laboratory 2010). Thus, the trend in energy savings from early adoption would have been embodied in the historical energy consumption data used to produce the ERCOT forecasts. The impact of imposing the 2009 standards would be significantly less than might otherwise be supposed, based on an engineering comparison of buildings with the new codes with the old codes. Second, because the codes would apply only to new structures, its effect depends on how many new structures are built under the new codes. Third, new codes would not address additional growth and electrification of household services (e.g., additional plug loads) in either new or existing homes. Finally, the codes must be enforced as well as adopted. Not all jurisdictions do this equally well, although the major metropolitan areas in Texas reportedly do a good job. In addition, the 15 percent savings figure discussed in the second comment must hold up in the field (there would have to be no take-back or rebound effects on energy use from lowered cost of household services due to the more efficient buildings). ERCOT did not publish the underlying economic data for their 2010 forecast and the review team was not able to locate either good estimates of future construction in Texas or estimates of building-code-sensitive electricity use in new buildings so it was not possible to perform a quantitative estimate of the near-term impact of the new building code. It is likely that many of the*

[47] Exh. NRC00003D, at E-75 to E-77; Pieniazek Direct Testimony, at Q23.

> *contemplated savings would be covered in the lower demand growth in the 2010 ERCOT forecast and in the sensitivity tests the review team conducted on the ERCOT forecast in Chapter 8.*[48]

Therefore, the FEIS fully addresses the issues raised by the Intervenors in Contention DEIS-1-G regarding the ACEEE Report.[49]

For these reasons, the omissions that are the subject of Contention DEIS-1-G have been fully addressed by the NRC Staff in FEIS Chapter 8 and Appendix E. As the Commission has held, "where a contention is 'superseded by the subsequent issuance of licensing-related documents'—whether a draft EIS or an applicant's response to a request for additional information—the contention *must* be disposed of or modified."[50] In the instant case, based on the issuance of the FEIS by the NRC Staff, "the omission alleged in [Contention DEIS-1-G] has been cured and the DEIS is no longer defective."[51] Therefore, Contention DEIS-1-G is moot, and should be dismissed.

B. <u>The FEIS Need for Power Evaluation Complies with NEPA</u>

The Intervenors argue that the DEIS understates the total available capacity in the ERCOT region because it does not account for demand reduction from the new energy efficient building code.[52] As discussed above, the NRC Staff revised the DEIS evaluation when it issued the FEIS to include consideration of the energy efficient building code. Regarding the new energy efficient building code, FEIS Section 8.2 states:

> Based on review team discussions with ERCOT staff (Scott 2010) and extensive examination of Texas public documents and

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48 Exh. NRC00003D, at E-76 to E-77; Pieniazek Direct Testimony, at Q23. A survey of energy code adoption by various Texas cities is provided as Exh. STP000010.

49 Pieniazek Direct Testimony, at Q25.

50 *McGuire-Catawba*, CLI-02-28, 56 NRC at 382 (emphasis added).

51 *LES*, LBP-05-13, 61 NRC at 411.

52 Motion at 4.

> websites, the review team concluded that while there may be some long-range impacts resulting from these programs not currently captured by the ERCOT models, there is almost no currently available, reliable information that suggests the impacts of these programs have been significant on a statewide basis or that they require a significant adjustment to the ERCOT forecasts.[53]

Due to these uncertainties, the Staff did not directly reduce the ERCOT demand projections to account for the energy efficient building code, and instead performed a sensitivity test. This approach is consistent with well-established NRC adjudicatory principles governing review of need for power forecasts that allow for reasonable uncertainties.

In the leading case, *Niagara Mohawk Power Corp.*, the Appeal Board held that "inherent in any forecast of future electric power demands is a substantial margin of uncertainty," and therefore the applicant's projection of future need should be accepted if it is "reasonable."[54] As the Appeal Board held in a later case:

> [A] forecast that such need exists is not to be discarded as fatally flawed simply because the future course of events is sufficiently clouded to give rise to the possibility of a significant margin of error. Given the legal responsibility imposed upon a public utility to provide at all times adequate, reliable service – and the severe consequences which may attend upon a failure to discharge that responsibility – *the most that can be required is that the forecast be a reasonable one in the light of what is ascertainable at the time made*.[55]

This standard has been endorsed by the Commission itself in *Carolina Power and Light Co.*, where it stated:

> The Nine Mile Point rule recognizes that every prediction has associated uncertainty and that long-range forecasts of this type are especially uncertain in that they are affected by trends in usage,

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53 Exh. NRC00003C, at 8-19.

54 *Niagara Mohawk Power Corp.* (Nine Mile Point Nuclear Station, Unit 2), ALAB-264, 1 NRC 347, 365-67 (1975).

55 *Kan. Gas & Elec. Co.* (Wolf Creek Generating Station, Unit 1), ALAB-462, 7 NRC 320, 328 (1978) (emphasis added).

> increasing rates, demographic changes, industrial growth or decline, the general state of the economy, etc. These factors exist even beyond the uncertainty that inheres to demand forecasts: assumptions on continued use from historical data, range of years considered, the area considered, extrapolations from usage in residential, commercial, and industrial sectors, etc.[56]

Similarly, the Appeal Board in *Duke Power Co.* ruled that an applicant's load forecasts

> are [not] automatically suspect because they are inclined to be "conservative," that is to say they tend to project future loads closer to the high than to the low end of the demand spectrum. To be sure, if demand does turn out to be less than predicted it can be argued (as intervenor does) that the cost of the unneeded generating capacity may turn up in the customers' electric bills. . . . But should the opposite occur and demand outstrip capacity, the consequences are far more serious.[57]

And, more recently, the licensing board in the *Clinton* Early Site Permit proceeding stated that:

> [W]e are cognizant of the fact that a NEPA analysis often must rely upon imprecise and uncertain data, particularly when attempting to forecast future markets and technologies, and Boards (and parties) must appreciate the fact that such forecasts "provide no absolute answers," and must be "judged on their reasonableness." NEPA analyses are subject to a "rule of reason" which teaches that an environmental impact statement need only discuss "the significant aspects of the probable environmental impact of the proposed agency action."[58]

The FEIS approach for accounting for uncertainties in the demand forecasts due to the new energy efficient building code is consistent with the above NRC case law and NEPA. As further support for this conclusion, NINA's expert witness explains that, because only a few

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[56] *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant, Units 1, 2, 3, & 4), CLI-79-5, 9 NRC 607, 609-10 (1979).

[57] *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-355, 4 NRC 397, 410 (1976).

[58] *Exelon Generation Co.* (Early Site Permit for Clinton ESP Site), LBP-05-19, 62 NRC 134, 167, *aff'd*, CLI-05-29, 62 NRC 801 (2005), *aff'd sub nom.*, *Envtl. Law & Policy Ctr. v. NRC*, 470 F.3d 676 (7th Cir. 2006) (emphasis omitted).

months have passed since the adoption of the new energy efficient building code, there is not enough reliable performance information to assess its potential quantitative effect on the most recent ERCOT forecast.[59]

Despite the inherent uncertainties in predicting the reduction in power demand attributable to the new building codes, the FEIS includes potential effects of the energy efficient building code in its sensitivity test.[60] The FEIS thus accounts for uncertainties in future demand reductions due to energy efficiency, which include the new energy efficient building code.[61] Even with this reduction in demand, the sensitivity analysis shows a need for power from STP Units 3 and 4.[62] The approach to the energy efficient building code in the FEIS is "a reasonable one in the light of what is ascertainable at the time made,"[63] and it therefore satisfies NEPA.

Furthermore, the Commission has recognized that a need for power analysis does not need to precisely pinpoint *when* the need for power will exist, just *whether* it will exist. In *Carolina Power and Light Co.*, the Commission endorsed the general rule that a one or two year deferral in need for power from a plant is not a legally sufficient basis for litigation. Quoting the Appeal Board in the *Niagara Power* decision discussed above, the Commission stated that the couple year difference was not a "statistically meaningful distinction" and is within the margin of uncertainty in demand forecasts.[64]

Petitioners have not claimed that there will be no need for power from STP Units 3 and 4, just that the FEIS evaluation does not account for potential demand reduction. Even assuming

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59 Pieniazek Direct Testimony, at Q22.

60 Pieniazek Direct Testimony, at Q22.

61 Pieniazek Direct Testimony, at Q22.

62 Pieniazek Direct Testimony, at Q15; Exh. NRC00003C, at 8-27.

63 *Wolf Creek*, ALAB-462, 7 NRC at 328.

64 *Shearon Harris*, CLI-79-5, 9 NRC at 609-10 (quoting *Nine Mile Point*, ALAB-264, 1 NRC at 365).

Petitioners are correct, their argument would only shift the need for power by a year or two at most, not eliminate it.[65] Therefore, Contention DEIS-1-G is not statistically meaningful, and should be rejected.

C. The ACEEE Report Does Not Support the Demand Savings Claimed by the Intervenors

The ACEEE Report is the sole basis for the Intervenors' conclusion that the adoption of the new energy efficient building code *could* lead to a reduction in peak summer demand of 2,362 MW annually by 2023.[66] This value is adopted in the Power Comments attached to Contention DEIS-1-G, which in turn is based upon the March 2007 ACEEE Report.[67] The Power Comments also rely upon a one-page written testimony of a representative from the Environmental Defense Fund that was submitted during legislative hearings in April 2009 on the proposed Texas energy efficient building code rules.[68] But this testimony simply recites the Intervenors' position that the code potentially will reduce peak summer demand by 2,362 MW by 2023.[69]

The ACEEE Report is over four years old and does not reflect current conditions. The ACEEE Report advocated that Texas carry out nine individual energy demand savings policies, including adoption of "more stringent building codes."[70] In an effort to persuade the Texas Legislature to adopt these demand savings policies, ACEEE calculated the potential demand savings for the entire state of Texas for each specific policy from years 2008 to 2023.[71] The

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65 Pieniazek Direct Testimony, at Q43.

66 Pieniazek Direct Testimony, at Q28.

67 Pieniazek Direct Testimony, at Q28; Exh. STP000008, at 48.

68 Pieniazek Direct Testimony, at Q28.

69 Pieniazek Direct Testimony, at Q28.

70 Pieniazek Direct Testimony, at Q29; Exh. STP000008, at 20.

71 Pieniazek Direct Testimony, at Q30.

starting point for these demand savings was 2006 peak summer demand data, based primarily upon ERCOT's 2006 "Capacity, Demand, and Reserves in the ERCOT Region" Report ("CDR Report").[72] Because the CDR Report is focused solely on the ERCOT region, the ACEEE Report scaled up ERCOT's projected peak summer demand values in order to cover the entire state of Texas, not just the ERCOT region.[73] The ACEEE Report estimated that the adoption of more stringent building codes could result in an annual peak summer demand reduction of 2,362 MW by 2023 in the entire state of Texas—the value relied upon by the Intervenors.[74] This value was based upon the assumption that the more stringent building codes would avoid 15% of the increase in demand from 2009 to 2020 and 30% of the increase in demand thereafter.[75]

The Board has previously recognized that the ACEEE Report is outdated, stating that the Board would be "scarcely surprised" if the ACEEE Report made "inapplicable assumptions about the implementation of an energy efficient building code" and also "[did] not perfectly forecast demand savings."[76] The Board's statements regarding the ACEEE Report are substantiated by the Pieniazek Direct Testimony. As detailed in the Pieniazek Direct Testimony,[77] the ACEEE Report does not support Intervenors' projection of a 2,362 MW peak demand savings by 2023, because the 2007 ACEEE Report:

- relies upon 2006 ERCOT data and therefore does not account for current ERCOT load forecasts (which forecast a substantially lower increase in demand for power),
- makes forecasts for the entire state (not just the smaller ERCOT region that forms the basis for the need for power analysis for STP Units 3 and 4),

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72 Pieniazek Direct Testimony, at Q31; Exh. STP000005.

73 Pieniazek Direct Testimony, at Q31; Exh. STP000008, at 6-7.

74 Pieniazek Direct Testimony, at Q30; Exh. STP000008, at 48.

75 Exh. STP000008, at 25.

76 *South Texas Project*, LBP-11-07, slip op. at 47.

77 Pieniazek Direct Testimony, at Q33.

- applies to peak instead of baseload power demand, and
- acknowledges that any purported savings may not be "realistically achievable."[78]

Each of these factors is discussed in more detail below.

The 2007 ACEEE Report relies upon 2006 ERCOT projections, which are now outdated in comparison to the 2010 ERCOT projections used in the FEIS.[79] In 2006, ERCOT forecasted significantly higher increases in demand than it does now. The potential savings from new building codes identified in the ACEEE Report were directly proportional to ERCOT's predicted increase in demand. Because ERCOT is now forecasting a significantly smaller increase in demand, the potential savings identified by the ACEEE Report are correspondingly affected. As demonstrated in the Pieniazek Direct Testimony, if the methodology in the ACEEE Report were utilized in conjunction with the peak summer demand values from the May 2010 CDR Report—instead of the outdated 2006 values—the potential demand reduction tied to more stringent building codes would be reduced substantially.[80] The peak demand increase by 2023 forecasted using data from the May 2010 CDR Report[81] is only 52.1% of the peak demand increase by 2023 forecasted using data from the 2006 CDR Report.[82] After accounting for this lower demand increase, the Intervenors' assumed 2,362 MW reduction in peak demand by 2023 associated with more stringent building codes is reduced to 1,231 MW (*i.e.*, 52.1% of 2,362 MW).[83]

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78 Pieniazek Direct Testimony, at Q31-Q37; Exh. STP000008, at 8.

79 Pieniazek Direct Testimony, at Q32.

80 Pieniazek Direct Testimony, at Q33.

81 Exh. STP000006. ERCOT also prepared a December 2010 update to the May 2010 CDR Report, which is provided as Exh. STP000007.

82 Pieniazek Direct Testimony, at Q33.

83 Pieniazek Direct Testimony, at Q33.

Additionally, the need for power analysis for STP Units 3 and 4 used the ERCOT region as the region of interest, which accounts for approximately 85% of the power demand in the state of Texas.[84] Because the ACEEE Report is focused more broadly on the entire state of Texas, the 2,362 MW projected demand reduction in 2023 also applies to the entire state. As discussed in the Pieniazek Direct Testimony, the 2,362 MW of savings in Texas would need to be multiplied by a ratio of 85/100 in order to cover only the ERCOT region.[85] After adjusting the 2,362 MW value to 1,231 MW to account for more recent ERCOT projections, and then reducing it to cover only the ERCOT region, the resulting ACEEE Report demand reduction due to more stringent building codes is reduced to 1,046 MW in 2023.[86]

Furthermore, STP Units 3 and 4 are baseload power generating plants.[87] By contrast, peak power demand reflects short periods of high power demand, typically during daytime hours during summer months.[88] The ACEEE Report is *focused solely on peak* summer demand, not baseload demand.[89] The FEIS estimated that baseload generation would account for approximately 39% of peak load generation.[90] Therefore, as explained in the Pieniazek Direct Testimony, after further reducing the 2,362 MW value to 1,231 MW to account for more recent demand projections, and reducing that value to 1,046 MW to only account for the ERCOT region, and then reducing it to 39% to account for baseload demand, the resulting ACEEE Report demand reduction due to more stringent building codes is 408 MW in 2023.[91] This value

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84 Pieniazek Direct Testimony, at Q31; Exh. NRC00003C, at 8-2.

85 Pieniazek Direct Testimony, at Q34.

86 Pieniazek Direct Testimony, at Q34.

87 Pieniazek Direct Testimony, at Q9.

88 Pieniazek Direct Testimony, at Q16.

89 Pieniazek Direct Testimony, at Q36; Exh. STP000008, at iv.

90 Pieniazek Direct Testimony, at Q40; Exh. NRC00003C, at 8-26.

91 Pieniazek Direct Testimony, at Q36.

is a fraction of the baseload generation that would be provided from STP Units 3 and 4, and much less than the forecasted baseload generation needs.[92]

The ACEEE Report also acknowledges that reductions in peak demand achieved through the implementation of various energy efficiency programs are purely notional.[93] The ACEEE Report states that "experience with actual [energy efficiency] programs suggests that only a *portion* of this [savings in peak energy demand] is realistically achievable in the real world from programs and policies."[94] This qualification by the ACEEE Report would serve to reduce the amount of savings.[95] Therefore, even the 408 MW may not be "realistically achievable."[96] Under the "rule of reason" embodied in NEPA, there is no requirement to consider conditions that are not realistic.[97]

Moreover, as discussed in the Pieniazek Direct Testimony, the estimated 408 MW reduction in baseload demand by 2023 is an inherently conservative value because it does not account for the fact that the new energy efficient building code is likely to affect peak demand more than baseload demand.[98] The 408 MW demand reduction also is conservative in that it does not account for the fact that some municipalities previously implemented the new energy efficient building code.[99] Therefore, some of the savings identified in the ACEEE Report

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92 Pieniazek Direct Testimony, at Q36.

93 Pieniazek Direct Testimony, at Q37.

94 Pieniazek Direct Testimony, at Q37; Exh. STP000008, at 8 (emphasis added).

95 Pieniazek Direct Testimony, at Q38.

96 Pieniazek Direct Testimony, at Q42.

97 *See Vt. Yankee Nuclear Power Corp. v. NRDC*, 435 U.S. 519, 551 (1978) (holding that NEPA does not require consideration of energy conservation issues "deemed only remote and speculative possibilities, in view of basic changes required in statutes and policies of other agencies-making them available, if at all, only after protracted debate and litigation not meaningfully compatible with the time-frame of the needs to which the underlying proposal is addressed") (quoting *NRDC v. Morton*, 458 F.2d 827, 837-38 (D.C. Cir. 1972)).

98 Pieniazek Direct Testimony, at Q36.

99 Pieniazek Direct Testimony, at Q41.

already are included in the existing ERCOT power demand and its future need for power forecasts.[100]

In summary, the only support for the Intervenors' argument stems from ERCOT data that is now out of date, purported demand reduction for the entire state of Texas rather than just ERCOT, and savings in peak demand instead of baseload demand.[101] When the Intervenors' figure of 2,362 MW is adjusted to account for such factors, it is equivalent to a conservative estimate of 408 MW of baseload demand savings in 2023, which is much less than the baseload generation from STP Units 3 and 4, and is much less than the forecasted generation needs in 2023.[102]

D. After Directly Accounting for the Intervenors' Assumed 2,362 MW Demand Reduction, There Is Still a Need for Power from STP Units 3 and 4

As discussed above, there is a need to adjust the Intervenors' figure of 2,362 MW to account for various factors. Nevertheless, even if that figure were used directly without any adjustment, there still would be a need for power from STP Units 3 and 4 in 2018,[103] when STP Units 3 and 4 may enter commercial operation.[104]

As detailed in the Pieniazek Direct Testimony, to achieve ERCOT's 13.75% target reserve margin, the FEIS identifies a need for approximately 5,115 MW of additional power generation resources in 2020 and about 9,744 MW in 2025 based upon the ERCOT forecasts.[105] Reducing any of these values by Intervenors' proffered 2,362 MW demand reduction would still result in a need for power of more than the 2,600 MW from STP Units 3 and 4 in order to meet

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100 Pieniazek Direct Testimony, at Q41.

101 Pieniazek Direct Testimony, at Q42.

102 Pieniazek Direct Testimony, at Q42.

103 Pieniazek Direct Testimony, at Q43.

104 Pieniazek Direct Testimony, at Q9.

105 Pieniazek Direct Testimony, at Q39; Exh. NRC00003C, at 8-22.

ERCOT's target reserve margin.[106] Furthermore, the values cited above were calculated conservatively without *any* retirements of old power plants.[107] If retirements of 50-year old plants are accounted for, the need for additional power generation more than triples the values reported above.[108]

The FEIS also calculated that there is a need for baseload generation of 2,102 MW, 6,111 MW and 10,846 MW in the years 2015, 2020 and 2025, respectively, after accounting for retirements of 50-year old plants.[109] This further demonstrates the need for power from STP Units 3 and 4, even when the Intervenors' figure of 2,362 MW is subtracted.[110]

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106 Pieniazek Direct Testimony, at Q39.

107 Pieniazek Direct Testimony, at Q39.

108 Pieniazek Direct Testimony, at Q39.

109 Pieniazek Direct Testimony, at Q40, Q43; Exh. NRC00003C, at 8-29.

110 Pieniazek Direct Testimony, at Q43.

VI. CONCLUSIONS

For the reasons set forth in this Initial Statement of Position, as supported by the testimony and evidence filed herewith, there is a need for power from STP Units 3 and 4 even when the potential savings from the new energy efficient building code are taken into account. Accordingly, NINA respectfully requests that the Board issue an initial decision resolving Contention DEIS-1-G in NINA's favor.

Respectfully submitted,

/s/ *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 9th day of May 2011

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)	May 9, 2011	

CERTIFICATE OF SERVICE

I hereby certify that on May 9, 2011, copies of "Nuclear Innovation North America LLC's Initial Statement of Position on Contention DEIS-1-G"; "Direct Testimony of Applicant Witness Adrian Pieniazek Regarding Contention DEIS-1-G" (STP000001); Exhibits STP000002 to STP000003, STP000005 to STP000008, and STP000010; and "NINA Hearing Exhibits" were served by the Electronic Information Exchange on the following recipients:

Administrative Judge
Michael M. Gibson, Chair
Atomic Safety and Licensing Board Panel
Mail Stop T-3 F23
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
E-mail: mmg3@nrc.gov

Administrative Judge
Dr. Gary S. Arnold
Atomic Safety and Licensing Board Panel
Mail Stop T-3 F23
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
E-mail: gxa1@nrc.gov

Administrative Judge
Dr. Randall J. Charbeneau
Atomic Safety and Licensing Board Panel
Mail Stop T-3 F23
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
E-mail: Randall.Charbeneau@nrc.gov

Office of the Secretary
U.S. Nuclear Regulatory Commission
Rulemakings and Adjudications Staff
Washington, DC 20555-0001
E-mail: hearingdocket@nrc.gov

Sara Kirkwood
Michael Spencer
Anthony Wilson
Jody Martin
Andrea Silvia
Office of the General Counsel
U.S. Nuclear Regulatory Commission
Mail Stop O-15D21
Washington, DC 20555-0001
E-mail: Sara.Kirkwood@nrc.gov
Michael.Spencer@nrc.gov
Anthony.Wilson@nrc.gov
Jody.Martin@nrc.gov
Andrea.Silvia@nrc.gov

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

Robert V. Eye
Brett A. Jarmer
Counsel for the Intervenors
Kauffman & Eye
112 SW 6th Ave., Suite 202
Topeka, KS 66603
E-mail: bob@kauffmaneye.com
brett@kauffmaneye.com

Signed (electronically) by Steven P. Frantz
Steven P. Frantz
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