LBP-12-05

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 Nos. 52-12-COL and 52-13-COL ASLBP No. 09-885-08-COL-BD01 February 29, 2012

SECOND PARTIAL INITIAL DECISION
(Contention DEIS-1-G)

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I. INTRODUCTION

This partial initial decision (PID)[1] concerns the application of Nuclear Innovation North America LLC (Applicant) for combined licenses (COLs) under 10 C.F.R. Part 52 that would permit the construction and operation of two new nuclear reactor units—proposed South Texas Project (STP) Units 3 and 4, employing the Advanced Boiling Water Reactor (ABWR) certified design—on the existing South Texas site, located near Bay City, Texas.[2] The South Texas site currently houses two nuclear reactors, STP Units 1 and 2.

[1] This is the second PID on environmental matters for this proceeding. The first PID, LBP-11-38, 74 NRC __ (Dec. 29, 2011), resolved Contention CL-2 in favor of Staff and Applicant.

[2] South Texas Project Nuclear Operating Company; Notice of Receipt and Availability of Application for a Combined License, 72 Fed. Reg. 60,394 (Oct. 24, 2007).

We rule on the merits of Contention DEIS-1-G. This contention challenges the estimated need for power that proposed STP Units 3 and 4 would satisfy. As admitted by the Board, Contention DEIS-1-G states:

> NRC Staff's DEIS [Draft Environmental Impact Statement] 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.[3]

On June 4, 2010, subsequent to Intervenors filing their contention, Texas adopted energy efficient building code rules.[4]

On October 31, 2011, this Board held an evidentiary hearing in Rockville, Maryland on Contention DEIS-1-G. After considering all the evidence and legal arguments, the Board concludes that the Final Environmental Impact Statement (FEIS), as supplemented by the evidence introduced at the evidentiary hearing, adequately accounts for reduced demand caused by the adoption of energy efficient building codes in Texas and demonstrates a need for power from proposed STP Units 3 and 4. Thus, the Board rules that the NRC Staff (Staff) has carried its burden to demonstrate the adequacy of the environmental review in accordance with the National Environmental Policy Act (NEPA) and 10 C.F.R. Part 51 regarding Contention DEIS-1-G.

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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 50) (Feb. 28, 2011); see also Intervenors' Motion for Leave to File New Contentions Based on the Draft Environmental Impact Statement (May 19, 2010) at 4 (Motion for DEIS Contentions); id., attach., David Power, Comments Regarding Draft Environmental Impact Statement for Combined Licenses for South Texas Project Units 3 & 4 (May 19, 2010) at 4 (David Power Comments).

[4] 35 Tex. Reg. 4,727, 4,728 (June 4, 2010) (adopting Final Rule, 34 Tex. Admin. Code § 19.53).

II. BACKGROUND[5]

A. Procedural History

On September 20, 2007, Applicant[6] applied to the Nuclear Regulatory Commission (NRC) for COLs that would permit the construction and operation of proposed STP Units 3 and 4. Following the NRC's publication of a notice of hearing and opportunity to petition for leave to intervene in this matter,[7] Intervenors[8] jointly filed a petition that challenged several aspects of Applicant's COL application (COLA).[9] This Board was established on May 1, 2009 to adjudicate the STP COL proceeding.[10]

Staff issued the DEIS for proposed STP Units 3 and 4 in March 2010.[11] Chapter 8 of the DEIS addressed the need for power from proposed STP Units 3 and 4 in the subject region, where the Electric Reliability Council of Texas (ERCOT) operates the electrical grid. Staff

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[5] This proceeding produced a number of procedural detours that have no material bearing on the decision regarding the contention at issue here, and so we do not recite this proceeding's entire procedural history. For such an account see LBP-09-21, LBP-10-14, and LBP-11-07.

[6] At the outset of this proceeding, the lead applicant for the South Texas Project (STP) Units 3 and 4 was the STP Nuclear Operating Company (STPNOC). In early 2011, Nuclear Innovation North America LLC (NINA) replaced STPNOC as the lead applicant for a consortium of several applicants. Licensing Board Order (Revising Case Caption) (Feb. 7, 2011) at 1. This Partial Initial Decision (PID) refers to NINA as the lead applicant.

[7] South Texas Project Nuclear Operating Company Application for the South Texas Project Units 3 and 4; Notice of Order, Hearing, and Opportunity to Petition for Leave to Intervene, 74 Fed. Reg. 7,934 (Feb. 20, 2009).

[8] Intervenors are three public interest organizations: the Sustainable Energy and Economic Development Coalition, the South Texas Association for Responsible Energy, and Public Citizen.

[9] Petition for Intervention and Request for Hearing (Apr. 21, 2009) (Petition).

[10] South Texas Project Nuclear Operating Company; Establishment of Atomic Safety and Licensing Board, 74 Fed. Reg. 22,184, 22,184 (May 12, 2009).

[11] 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). Excerpts from the DEIS are provided as Exhs. NRC000065 and INT000040 (DEIS).

concluded that there would be a need for the power from proposed STP Units 3 and 4 and therefore recommended that the COLs for proposed STP Units 3 and 4 be issued.[12]

On May 19, 2010, Intervenors proffered six new contentions (Contentions DEIS-1 through DEIS-6) that alleged various inadequacies in Staff's DEIS for proposed STP Units 3 and 4.[13] As pled, Contention DEIS-1 challenged the DEIS assessment of the need for power with eight independent allegations, A through H. On February 28, 2011, the Board admitted one aspect of the contention related to Intervenors' DEIS-1-G arguments, but declined to admit the remainder.[14]

Thereafter, in light of Staff's publication of its FEIS in late-February 2011,[15] as well as the absence of a final safety report by the Advisory Committee on Reactor Safeguards,[16] the Board and parties agreed to expedite the environmental portion of this proceeding and to set a schedule for an evidentiary hearing on the environmental contentions.[17] Under that schedule, the parties submitted pre-filed direct testimony, initial position statements, and exhibits on May

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[12] Id. at 8-25 to 8-26, 10-27.

[13] Motion for DEIS Contentions at 4; David Power Comments at 4.

[14] LBP-11-07, 73 NRC at __ (slip op. at 35).

[15] Nuclear Innovation North America LLC; Notice of Availability of the Final Environmental Impact Statement for South Texas Project Units 3 and 4 Combined License Application Review, 76 Fed. Reg. 11,522, 11,522 (Mar. 2, 2011); NRC Staff Status Update on Safety and Environmental Documents (Mar. 1, 2011).

[16] These are the two "triggering" events for holding an evidentiary hearing under our Initial Scheduling Order (ISO). Licensing Board [ISO] (Oct. 29, 2009) at 14.

[17] Licensing Board Memorandum and Order (Establishing Schedule for Evidentiary Hearing) (Mar. 11, 2011) at 1-2 (unpublished). Although DEIS-1-G states a challenge to only the DEIS, that challenge applies equally to the FEIS under the migration tenet. See, e.g., Progress Energy Florida, Inc. (Combined License Application for Levy County Nuclear Power Plant, Units 1 and 2), LBP-11-01, 73 NRC __, __, n.13 (slip op. at 7, n.13) (Feb. 2, 2011).

9, 2011.[18] On May 31, 2011, the parties submitted rebuttal testimony, rebuttal position statements, and exhibits.[19]

On June 17, 2011, Applicant and Staff filed motions in limine, seeking to strike aspects of the Intervenors' pre-filed direct and rebuttal testimony and accompanying exhibits.[20] Intervenors responded to the motions, conceding that portions of testimony and certain exhibits should be excluded, but arguing that, in all other respects, the motions in limine should be denied.[21] Insofar as the parties agreed material was irrelevant, we granted the motions in limine, but, in all other respects, we denied them.[22]

On August 17, 2011, Applicant filed surrebuttal testimony and additional exhibits to address arguments regarding the energy savings due to renovations that were raised by Intervenors in their rebuttal testimony.[23] On August 17, 2011, Staff likewise filed additional exhibits and an affidavit regarding the savings from renovations.[24]

On August 18 and 19, 2011, the Board commenced an evidentiary hearing in Austin, Texas on Contention DEIS-1-G, as well as on Contention CL-2. The Board admitted into

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[18] Nuclear Innovation North America LLC's Initial Statement of Position on Contention DEIS-1-G (May 9, 2011) (Applicant's Initial Statement); NRC Staff Initial Statement of Position (May 9, 2011) (Staff's Initial Statement); Intervenors' Initial Statements of Position in Support of Contentions CL-2 and DEIS-1 (May 9, 2011) (Intervenors' Initial Statement).

[19] Nuclear Innovation North America LLC's Rebuttal Statement of Position on Contention DEIS-1-G (May 31, 2011); NRC Staff Rebuttal Statement of Position (May 31, 2011); Intervenors' Consolidated Response to Applicant's and Staff's Statements of Initial Positions (May 31, 2011).

[20] Nuclear Innovation North America's Motion in Limine to Strike Portions of Intervenors' Initial and Rebuttal Submissions (June 17, 2011) (Applicant Motion in Limine); NRC Staff Motion in Limine to Exclude Portions of Testimony and Exhibits Filed by the Intervenors (June 17, 2011) (Staff Motion in Limine).

[21] Intervenors' Consolidated Response to Applicant's & Staff's Motions in Limine (June 27, 2011) at 1-2.

[22] Licensing Board Order (Ruling on Motions in Limine) (July 14, 2011) at 3-4 (unpublished).

[23] Tr. at 1408.

[24] Tr. at 1409.

evidence the exhibits proffered by the parties.[25] Although the Board expected to complete the hearing at that time, the questioning of the witnesses with respect to Contention DEIS-1-G was postponed due to a medical emergency for Intervenors' witness on that contention.[26] The hearing on Contention DEIS-1-G was rescheduled for October 31, 2011.[27]

On October 31, 2011, the Board held an evidentiary hearing on Contention DEIS-1-G in Rockville, Maryland.[28] The hearing was conducted in accordance with the provisions of Subpart L to 10 C.F.R. Part 2. None of the parties requested an opportunity to conduct cross-examination. The parties offered into evidence pre-filed testimony and exhibits,[29] and the Board received live testimony from several witnesses.[30] After questioning these witnesses regarding the merits of DEIS-1-G the Board afforded the parties an opportunity to suggest cross-examination or rehabilitation questions.

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[25] Tr. at 1450-59 (Staff); Tr. at 1456 (Applicant); Tr. at 1468, 1514-15 (Intervenors).

[26] Tr. at 1652-54.

[27] Atomic Safety and Licensing Board; In the Matter of Nuclear Innovation North America LLC (South Texas Project Units 3 and 4); Evidentiary Hearing to Receive Testimony and Exhibits Regarding the Application, 76 Fed. Reg. 61,401, 61,401 (Oct. 4, 2011).

[28] In accordance with 10 C.F.R. § 2.315(a), before the hearing, the Board accepted written limited appearance statements from members of the public in connection with the hearing. 76 Fed. Reg. at 61,401.

[29] For the exhibit numbers used in this PID and reflected in the agency's electronic hearing docket, evidence was described as follows: (1) a three-character party identifier, i.e., STP, NRC, and INT; followed by (2) six-character evidence identifier—designed to reflect the sequential number of the exhibit and whether it was revised subsequent to its original submission as a pre-filed exhibit, e.g., evidentiary exhibit INTR20001 admitted at the August 2011 hearing is the second revised version of pre-filed exhibit INT000001; (3) followed by a two-character identifier, here "00" (where there is a mandatory/uncontested portion of a proceeding, the identifier would indicate that the exhibit was utilized in the mandatory/uncontested portion of a proceeding, i.e., MA); followed by (4) the designation BD01, which indicates that this Licensing Board, i.e., BD01, was involved in its identification and admission. Accordingly, the official designation for Intervenors' pre-filed direct testimony on DEIS-1-G, referenced above, is INTR20001-00-BD01. But for simplicity, we will refer to all admitted exhibits admitted by their initial nine-character designation only, e.g., INTR20001.

[30] Tr. at 1714 (Pieniazek); Tr. at 1740 (Scott and Mussatti); Tr. at 1785 (Mosenthal).

Following the October 31 evidentiary hearing, the Board adopted certain corrections to the hearing transcript and closed the evidentiary record with respect to Contention DEIS-1-G.[31] On November 30, 2011, the parties filed proposed findings of fact and conclusions of law regarding DEIS-1-G.[32]

B. DEIS's Need for Power Assessment

Chapter 8 of the DEIS addresses the need for power. Principally based upon a review of ERCOT studies,[33] the DEIS projects a future shortage of up to 4,400 MW in baseload generation capacity during 2014-2019[34]—i.e., the period within which proposed STP Units 3 and 4 are scheduled to come on line. It further projects that, by 2024, there will be a need for an additional 10,417 MW of capacity.[35] The DEIS also concludes that, even were proposed STP Units 3 and 4 to go on-line, they could only partially satisfy this shortage.[36] Accordingly, the DEIS states "there is a justified need for new baseload generating capacity in the ERCOT region in excess of the planned 2,740 MW capacity output of proposed Units 3 and 4 at STP."[37]

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[31] Licensing Board Memorandum and Order (Adopting Transcript Corrections and Closing Evidentiary Record) (Nov. 29, 2011) at 1 (unpublished).

[32] [NINA's] Proposed Findings of Fact and Conclusions of Law for Contention DEIS-1-G (Nov. 30, 2011); NRC Staff Proposed Findings of Fact and Conclusions of Law on Contention DEIS-1 in the Form of a Partial Initial Decision (Nov. 30, 2011); Intervenors' Proposed Findings of Fact and Conclusions of Law Concerning Contention DEIS-1 (Nov. 30, 2011).

[33] DEIS at 8-5 to -7, -23 to -24.

[34] Id. at 8-25.

[35] Id. at 8-23.

[36] Id. at 8-25 to -26.

[37] Id. at 8-25 to -26.

C. FEIS's Need for Power Assessment

The FEIS updates the DEIS need for power assessment by, inter alia, incorporating more recent ERCOT studies[38] and accounting for ERCOT's newly increased reserve margin mandate (representing an increase from 12.5% to 13.75%).[39] The FEIS further assessed the impact of emerging demand side management (DSM) programs, including "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] Even with these updates, however, Staff's conclusion in its FEIS remains unchanged:

> [T]here is an expected future shortage of baseload power in the ERCOT region that could be at least partially addressed by construction of proposed Units 3 and 4 at the STP site. . . . Building of the two new units could address (1) growth in demand for baseload power and (2) replacement of retiring baseload generating units elsewhere in the ERCOT region.[41]

III. LEGAL STANDARDS

A. Burden and Standard of Proof

On safety issues, an applicant in a licensing proceeding has the burden of establishing its entitlement to the applied-for license by a preponderance of the evidence.[42] But for NEPA contentions, as here, the burden falls on Staff because the NRC, not the applicant, bears the

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[38] FEIS at 8-7.

[39] Id. at 8-15.

[40] Id. at 8-18 (citing 35 Tex. Reg. 4,729 (June 4, 2010)).

[41] Id. at 8-32.

[42] 10 C.F.R. § 2.325; see also Pacific Gas and Electric Co. (Diablo Canyon Power Plant Independent Spent Fuel Storage Installation), CLI-08-26, 68 NRC 509, 521 (2008) (applying a preponderance of the evidence standard to resolution of an environmental contention). Throughout this PID, all the Board's factual findings are based on a preponderance of the evidence standard.

ultimate responsibility for complying with NEPA's dictates.[43] Even so, as a practical matter, Staff relies heavily upon the applicant's Environmental Report (ER) in preparing its Environmental Impact Statement (EIS).[44] Therefore, while all environmental contentions ultimately challenge the NRC's compliance with NEPA,[45] an applicant may advocate for a particular challenged position set forth in the EIS.[46]

B. NEPA and 10 C.F.R. Part 51

The contention at issue, DEIS-1-G, arises under NEPA and the NRC's implementing regulations.[47] NEPA requires that an agency prepare an EIS before approving any major Federal action that will significantly affect the quality of the human environment.[48] NEPA does not mandate substantive results; rather, NEPA 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.[49] This standard requires the agency to undertake a rigorous exploration and an objective analysis of environmental impacts. Merely offering "general statements about 'possible' effects and 'some risk' do[es] not constitute a 'hard look'

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[43] See, e.g., Duke Power Company (Catawba Nuclear Station, Units 1 & 2), CLI-83-19, 17 NRC 1041, 1049 (1983).

[44] See 10 C.F.R. §§ 51.41, 51.45(c).

[45] Catawba, CLI-83-19, 17 NRC at 1049.

[46] Louisiana Energy Services L.P. (Claiborne Enrichment Center), LBP-96-25, 44 NRC 331, 338-39 (1996) (citing Public Service Commission of New Hampshire (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).

[47] 42 U.S.C. §§ 4321- 4370; 10 C.F.R. Part 51.

[48] 42 U.S.C. § 4332(2)(C).

[49] LES, CLI-98-3, 47 NRC 77, 87-88; see also Baltimore Gas & Electric 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).

absent a justification regarding why more definitive information could not be provided."[50] Taking a hard look "foster[s] both informed decision-making and informed public participation," and thus ensures that the agency does not act upon "incomplete information, only to regret its decision after it is too late to correct."[51]

NEPA's "hard look," however, is tempered by a "rule of reason."[52] An agency need only address reasonably foreseeable impacts, not those that are "remote and speculative" or "inconsequentially small."[53] After all, NEPA only requires "reasonable forecasting."[54] As the Commission stated in its Pilgrim decision:

> There is no NEPA requirement to use the best scientific methodology, and NEPA "should be construed in the light of reason if it is not to demand" virtually infinite study and resources. Nor is an environmental impact statement intended to be a "research document," reflecting the frontiers of scientific methodology, studies and data. . . . And while there "will always be more data that could be gathered," agencies "must have some discretion to draw the line and move forward with decisionmaking." In short, NEPA allows agencies "to select their own methodology as long as that methodology is reasonable."[55]

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[50] Pa'ina Hawaii, LLC (Materials License Application), CLI-10-18, 72 NRC 56, 74 (2010) (quoting Blue Mountains Biodiversity Project v. Blackwood, 161 F.3d 1208, 1213 (9th Cir. 1998)).

[51] LES, CLI-98-3, 47 NRC at 88 (quoting Marsh v. Oregon Natural Resources Council, 490 U.S. 360, 371 (1989)).

[52] Louisiana Energy Services, LP (National 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 Department of Transportation v. Public Citizen, 541 U.S. 752, 767-69 (2004) (stating that the rule of reason is inherent in NEPA and its implementing regulations).

[53] See, e.g., Long Island Lighting, ALAB-156, 6 AEC at 836. According to the Council on Environmental Quality (CEQ), the "rule of reason" is "a judicial device to ensure that common sense and reason are not lost in the rubric of regulation." Final Rule: National Environmental Policy Act Regulations; Incomplete or Unavailable Information, 51 Fed. Reg. 15,618, 15,621 (Apr. 25, 1986).

[54] Scientists' Institute for Public Information, Inc. v. AEC, 481 F.2d 1079, 1092 (D.C. Cir. 1973); see also Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 354-55, 359 (1989) (rejecting the notion that NEPA requires a "worst case analysis").

[55] Entergy Nuclear Generation Company and Entergy Nuclear Operations, Inc. (Pilgrim Nuclear Power Station), CLI-10-11, 71 NRC 287, 315-16 (2010) (citations omitted).

In emphasizing that need for power forecasts are required only to be reasonable,[56] the Commission has observed that such forecasts need not "precisely identify future market conditions and energy demand, or . . . develop detailed analyses of system generating assets, costs of production, capital replacement ratios, and the like in order to establish with certainty that the construction and operation of a nuclear power plant is the most economical alternative for generation of power."[57] Rather, it is sufficient if the need for power assessment is at a level of detail "sufficient to reasonably characterize the costs and benefits associated with proposed licensing actions."[58] Otherwise "[q]uibbling over the details of an economic analysis" would effectively "stand[] NEPA on its head by asking that the license be rejected not due to environmental costs, but because the economic benefits are not as great as estimated."[59] Finally, we note that because a need for power assessment necessarily entails forecasting

[56] See Niagara Mohawk Power Corp. (Nine Mile Point Nuclear Station, Unit 2), ALAB-264, 1 NRC 347, 366-67 (1975), cited with approval in U.S. Energy Research and Development Administration Project Management Corp. Tennessee Valley Authority (Clinch River Breeder Reactor Plant), CLI-76-13, 4 NRC 67, 77 (1976); see also Kansas Gas & Electric, ALAB-462, 7 NRC at 328 ("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."); 68 Fed. Reg. at 55,909 ("The NRC has acknowledged the primacy of State regulatory decisions regarding future energy options. However, this acknowledgment does not relieve the NRC from the need to perform a reasonable assessment of the need for power.").

[57] See, e.g., 68 Fed. Reg. at 55,910 (citing LES, CLI-98-3, 47 NRC at 88, 94).

[58] South Carolina Electric & Gas Company and South Carolina Public Service Authority (also referred to as Santee Cooper) (Virgil C. Summer Nuclear Station, Units 2 and 3), CLI-10-01, 72 NRC 1, 17 (2010) (citing 68 Fed. Reg. at 55,910) (rejecting a need for power-related contention because, in part, the Joint Petitioners' load forecast claim called for a more detailed need for power analysis than the NRC requires).

[59] Private Fuel Storage, LLC (Independent Spent Fuel Storage Installation), CLI-04-22, 60 NRC 125, 145 (2004) (internal quotation marks omitted).

power demands in light of substantial uncertainty and the duty of providing adequate and reliable service to the public, need for power assessments are properly conservative.[60]

C. Mootness

We admitted Contention DEIS-1-G as a contention of omission.[61] When such omissions are cured by the subsequent issuance of licensing-related documents, "the contention must be disposed of or modified."[62] At that time, the intervenor must timely file a new or amended contention if it intends to challenge the sufficiency of the new information.[63] Resolution of the mooted contention requires no more than a finding by the presiding officer that the matter has become moot.[64]

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[60] See Niagara Mohawk Power Corp., ALAB-264, 1 NRC at 365-68, cited with approval in Carolina Power & Light Co. (Shearon Harris Nuclear Power Plant, Units 1, 2, 3, & 4), CLI-79-5, 9 NRC 607, 609-10 (1979); see also Duke Power Co. (Catawba Nuclear Station, Units 1 and 2), ALAB-355, 4 NRC 397, 410 (1976) ("To be sure, if demand does turn out to be less than predicted it can be argued…that the cost of the unneeded generating capacity may turn up in the customers' electric bills. This is not an ineluctable result, for oft times the surplus can be profitably marketed to other systems or the new capacity can replace older, less efficient units. But should the opposite occur and demand outstrip capacity, the consequences are far more serious.").

[61] LBP-11-07, 73 NRC at __ (slip op. at 48).

[62] Duke Energy Corp. (McGuire Nuclear Station, Units 1 & 2; Catawba Nuclear Station, Units 1 & 2), CLI-02-28, 56 NRC 373, 382 (2002) (emphasis added) (citing Catawba, CLI-83-19, 17 NRC at 1050); Exelon Generation Company (Early Site Permit for Clinton ESP Site), LBP-05-19, 62 NRC 134, 182 (2005).

[63] See 10 C.F.R. § 2.309(f)(1); Duke Energy Corp., CLI-02-28, 56 NRC at 383 (footnote and citations omitted); PFS, LBP-99-23, 49 NRC at 493. But even without filing a new or amended contention an intervenor's contention migrates to, and applies likewise to the subsequent licensing document. Thus, here although DEIS-1-G states a challenge to the DEIS, we view the contention as also challenging the FEIS. See, e.g., Levy, LBP-11-01, 73 NRC at __, n.13 (slip op. at 7, n.13) (Feb. 2, 2011).

[64] USEC, Inc. (American Centrifuge Plant), CLI-06-9, 63 NRC 433, 444-45 (2006); see also LES, LBP-05-13, 61 NRC 385, 410-11, 424-26, aff'd, CLI-05-28, 62 NRC 721, 723 (dismissing portions of two environmental contentions as moot in a partial initial decision on the finding that the omissions alleged by intervenors had been cured).

D. Supplementing Environmental Record

As the Commission recently reaffirmed, "[b]oards frequently hold hearings on contentions challenging the staff's final environmental review documents . . . In such cases, '[t]he adjudicatory record and Board decision (and . . . any Commission appellate decisions) become, in effect, part of the FEIS.'"[65] In other words, Staff's review (the FEIS itself) and the adjudicatory record become the pertinent environmental record of decision.[66] Our review of DEIS-1-G therefore encompasses all pertinent environmental analyses properly before us.

IV. FACTUAL FINDINGS AND LEGAL CONCLUSIONS

A. Scope of DEIS-1-G

Contention DEIS-1-G challenges the DEIS's need for power assessment of proposed STP Units 3 and 4. As admitted by the Board, Contention DEIS-1-G states:

> 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 ERCOT region.[67]

As pled by Intervenors, DEIS-1-G challenges the EIS's treatment of building codes as an approach to demand side management. Therefore, because the scope of a contention is limited to the issues of law and fact pled with particularity in the contention and any factual and legal material in support thereof,[68] DEIS-1-G is limited to the analysis of energy savings from implementing energy efficient building codes in Texas.

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[65] Nuclear Innovation North America LLC (South Texas Project, Units 3 and 4) CLI-11-06, 74 NRC __, __ (slip op. at 7-8) (Sept. 9, 2011) (citing LES, CLI-98-3, 47 NRC at 89 and Philadelphia Electric Co. (Limerick Generating Station, Units 1 and 2), ALAB-819, 22 NRC 681, 705-07 (1985)).

[66] See, e.g., Pacific Gas and Electric Co. (Diablo Canyon Power Plant Independent Spent Fuel Storage Installation), CLI-08-26, 68 NRC 509, 526 (2008), petition for review denied on other grounds, San Luis Obispo Mothers for Peace v. NRC, 635 F.3d 1109 (9th Cir. 2011).

[67] LBP-11-07, 73 NRC __, __ (slip op. at 50).

[68] Southern Nuclear Operating Co. (Early Site Permit for Vogtle ESP Site), CLI-10-5, 71 NRC 90, 100 (2010); Duke Energy Corp., CLI-02-28, 56 NRC at 379; see also Seabrook, ALAB-899,

Applicant and Staff assert that Intervenors' arguments, and concomitantly, their evidence, regarding DEIS-1-G should be narrowed to exclude two primary considerations: (1) energy savings from renovations for existing buildings;[69] and (2) future code updates in Texas.[70]

1. Energy Savings from Renovations

Regarding the application of building codes to renovations, we disagree with Applicant and Staff that the concept of renovations, along with Intervenors' supporting testimony and exhibits, should be excluded from the record. Even Applicant's witness, Mr. Pieniazek, conceded that the American Council for an Energy-Efficient Economy (ACEEE) Report, upon which Intervenors based DEIS-1-G, "already accounts for savings from renovations of existing buildings."[71] Therefore, because renovations are both fairly within the bounds of the contention and were not expressly excluded from the contention as admitted, they fall within the scope of DEIS-1-G.[72]

For the first time, in his rebuttal testimony,[73] Intervenors' witness, Mr. Mosenthal, stated that his initial estimates of energy savings are "likely significantly low" because they only include savings from new construction, not renovation.[74] To support this statement, Mr. Mosenthal

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28 NRC 93, 97 & n.11 (1988) (stating that the "intervenor is not free to change the focus of its admitted contention, at will, as the litigation progresses"), aff'd in part and remanded in part on other matters, Massachusetts v. NRC, 924 F.2d 311 (D.C. Cir.) (1991), cert. denied, 502 U.S. 899 (1991).

[69] Applicant Motion in Limine at 7; Staff Motion in Limine at 14.

[70] Applicant Motion in Limine at 5; Staff Motion in Limine at 11.

[71] Exh. STP000032 ("Surrebuttal Testimony of Applicant Witness Adrian Pieniazek Regarding Contention DEIS-1-G" (Aug. 17, 2011)) at 4-5.

[72] See Pilgrim, CLI-10-11, 71 NRC at 299.

[73] Although Mr. Mosenthal first raised the issue of renovations in his rebuttal testimony, both Applicant and Staff had a full and fair opportunity to respond by offering testimony and exhibits. See Exhs. STP000032 to STP000035; Exhs. NRC000066 to NRC000072.

[74] Exh. INTR00041 (Revised Rebuttal Testimony of Philip Mosenthal and Affidavit) at 10 (Mosenthal Rebuttal Testimony).

noted that new construction only represents about 1% or 2% of the total electrical load in any year.[75] Mr. Mosenthal also assumed that buildings are renovated once every 25 years, implying that annually 4% of energy consumption of existing buildings would be affected by code-based renovations.[76] As a result, Mr. Mosenthal testified that renovations represent up to two to three times more savings than his analysis in his direct testimony—bringing his estimate of savings in 2020 to 2,800-4,200 MW.[77] However, at hearing, Mr. Mosenthal clarified that he did not perform a revised analysis of impacts from renovations, nor could he support his assumption of a 25-year renovation period.[78] Moreover, Mr. Mosenthal testified that renovation of part of a building does not require the entire building to be brought up to code[79] and that some renovations do not require compliance with energy efficiency code requirements.[80] Even so, Mr. Mosenthal emphasized that his rebuttal testimony was intended only to "point[] out that the likely savings from retrofit are likely to be significantly more than new construction."[81]

In response, Staff analyzed the savings from retrofits more broadly, including not only renovations, but also additions and alterations.[82] For its calculations, Staff assessed savings in the residential sector and assumed that the savings in commercial and industrial sectors would be similar.[83] Staff first calculated a 40% baseline percentage of electricity use potentially

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[75] Mosenthal Rebuttal Testimony at 10.

[76] Mosenthal Rebuttal Testimony at 10.

[77] Mosenthal Rebuttal Testimony at 10.

[78] Tr. at 1822.

[79] Tr. at 1825-26.

[80] Tr. at 1825.

[81] Tr. at 1822-23.

[82] Exh. NRC000071 (Summary of Building Energy Code Impacts on Demand, including New Construction & Retrofits (Aug. 17, 2011)) at 1.

[83] Id. at 1.

affected by the building codes changes because typically only heating and cooling systems are affected by a retrofit.[84] Next, Staff calculated the impact of the updated building energy code on electricity consumption in typical residences (12.6% for newer, 47.0% for older).[85] After making these two calculations, Staff estimated the impact of applying code updates during retrofits to the differences in electricity consumption under updated building energy codes for entire buildings. Staff projected the fraction of cooling energy consumption impacted by the code to be 51.4%; the weighted average savings for new and older residences to be 40.3%; and the space-conditioning portion of a household's electricity use to be 40%.[86] According to Staff, this would produce a maximum household electricity savings of 8.3%, were the code applied to the entire house.[87] From this, Staff further reduced this savings to account for the fact that only a fraction of the house would be affected by the retrofit.[88] Next, Staff calculated the fraction of households that would be exposed to savings, i.e., those having a significant retrofit subject to enforcement, to be 9%.[89] Taken together, these adjustments would produce a reduction of total electricity use in residences of 0.1% annually, according to Staff.[90] Finally, Staff took this factor and with scaling factors for the ERCOT region relative to Texas and baseload power relative to peak power, adjusted the ACEEE Report estimates to project the net effect on total residential electricity consumption, yielding a savings of 72 MW baseload in 2015 and 143 MW baseload in

[84] Exh. NRC000066 (Savings Achieved from Application of 2009 Building Energy Code Retrofits (Aug. 17, 2011)) at 1.

[85] Id. at 1.

[86] Id. at 1-2.

[87] Id. at 2.

[88] Id. at 2.

[89] Id. at 2.

[90] Id. at 2.

2020.[91] According to Staff, these savings represent 39% of the savings that Staff initially calculated.[92] Accordingly, Staff asserts that even when energy savings due to renovations are added to Staff's initial savings estimate, they do not impact Staff's conclusion regarding the need for power from proposed STP Units 3 and 4, i.e., without any plant retirements, the need for power would be (638)[93] MW in 2015 and 548 MW in 2020, and with retirements of plants older than 50 years, the need for power would be 1,750 MW in 2015 and 5,398 MW in 2020.[94]

Accordingly, we find that the additional savings from renovations—however likely implicit in the baseline ERCOT data used to assess need for power in the FEIS—are dominated by the savings obtained from new construction and do not change the assessment of need for power in the ERCOT region. There is no factual support for Mr. Mosenthal's assertion in his testimony that savings from renovations could be two to three times the savings attributable to new construction. On the other hand, Staff performed a detailed analysis of the savings from renovations, demonstrating that the savings from energy efficient building codes is principally driven by savings from new construction. Because Staff's testimony and evidence—and our decision—supporting the assessment of renovations forms part of the environmental record of this proceeding and supplements the respective analyses in the FEIS, we conclude the record in this proceeding achieves compliance with NEPA and Part 51.

2. Energy Savings from Future Code Updates

Regarding future building code updates, a fair reading of Contention DEIS-1-G clearly does not encompass code updates that Texas, at some point in the future, might adopt. However, Intervenors' witness, Mr. Mosenthal, suggests that Texas will adopt future energy

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[91] Id. at 2.

[92] Exh. NRC000071 at 1.

[93] Here, a negative need indicates excess capacity.

[94] Id. at 1.

efficient building codes that will substantially increase savings—for residential, to 39% in 2015, to 45% in 2020, and to 55% in 2025; for commercial, to 22% in 2015, to 29% in 2020, and to 32% in 2025.[95]

As originally pled by Intervenors, however, Contention DEIS-1-G dealt solely with Texas' adoption of an energy efficient building code in June 2010, modeled after the International Energy Conservation Code (IECC).[96] In support of the contention, Intervenors' Motion for DEIS Contentions referred to the David Power Comments,[97] which in turn indicated that the State Energy Conservation Office had announced that Texas would be adopting the IECC 2009 building code.[98] Thus, Contention DEIS-1-G and the factual support that Intervenors submitted in support of that contention, were focused on current, not future, events. Specifically, Intervenors made no suggestions as to when future code updates would become effective, much less what they would require or the energy savings they would achieve. Moreover, our ruling admitting Contention DEIS-1-G solely contemplated Texas' adoption of energy efficient building codes in June 2010.[99] Therefore, Mr. Mosenthal's testimony and exhibits dealing with the savings from future code updates are outside the scope of Contention DEIS-1-G.

Additionally, we observe that the possible future adoption of building codes is remote and speculative. Prior to 1999, according to Staff, Texas had no mandatory statewide energy code for either residential or commercial buildings.[100] Statewide codes (with supplements) were

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[95] Exh. INTR20001 (Revised Direct Testimony of Philip Mosenthal and Affidavit) at 9.

[96] Motion for DEIS Contentions at 4.

[97] Intervenors offered these comments, by Mr. Power, as expert support for their six proffered DEIS-related contentions.

[98] David Power Comments at 4.

[99] LBP-11-07, 73 NRC at __ (slip op. at 42, 47-48).

[100] Exh. NRC000049 at 1-2.

not adopted until 2001.[101] Then in 2003 and again in 2006, Texas declined to update its codes, even though updated codes were proposed and a process existed to consider them.[102] It was not until 2010 that Texas adopted an energy efficient building code, which even Mr. Mosenthal conceded was a necessary condition for accepting state energy program funding under the American Recovery and Reinvestment Act (ARRA).[103] This was only the second statewide adoption of energy efficient building codes. Therefore, without any apparent trend in the adoption of energy efficient building codes and without any apparent funding incentive, such as ARRA provided, the future adoption of energy efficient building codes is remote and speculative, and therefore, inappropriate for consideration under NEPA and NRC case law.[104]

B. Evidentiary Record

3. Testimony

During the evidentiary hearing on DEIS-1-G, Applicant presented one witness, Adrian Pieneazek, to testify about the impact of energy efficient building codes on the need for power assessment for proposed STP Units 3 and 4. Based on his education and experience, Applicant's witness was found qualified to testify on DEIS-1-G.[105]

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[101] Id. at 1-2.

[102] Id. at 2; Tr. at 1738 (Pieniazek Testimony).

[103] Tr. at 1800 (Mosenthal Testimony); see also Exh. NRC000049 at 3.

[104] See, e.g., Vermont Yankee (Vermont Yankee Nuclear Power Station), ALAB-919, 30 NRC 29, 44 (citing Limerick Ecology Action, Inc. v. NRC, 869 F.2d 719, 739 (3d Cir. 1989)) (holding that consideration of "remote and speculative" impacts is not required); LES, CLI-05-20, 62 NRC at 536 (holding that NEPA does not require consideration of speculative impacts).

[105] Tr. at 1712-14; see Exh. STP000002 (Adrian Pieniazek Resume (May 9, 2011)); Exh. STP000001 ("Direct Testimony of Applicant Witness Adrian Pieniazek Regarding Contention DEIS-1-G" (May 9, 2011)) (Pieniazek Direct Testimony); Exh. STP000028 ("Rebuttal Testimony of Applicant Witness Adrian Pieniazek Regarding Contention DEIS-1-G" (May 31, 2011)) (Pieniazek Rebuttal Testimony); Exh. STP000032 ("Surrebuttal Testimony of Applicant Witness Adrian Pieniazek Regarding Contention DEIS-1-G" (Aug. 17, 2011)) (Pieniazek Surrebuttal Testimony).

Staff presented two witnesses to testify on DEIS-1-G, Michael Scott and Daniel Mussatti. Based on their respective education and experience, Staff's witnesses were found qualified to testify on DEIS-1-G.[106]

Intervenors presented one witness to testify regarding DEIS-1-G, Philip Mosenthal. Based on his education and experience, Intervenors' witness was found qualified to testify on DEIS-1-G.[107]

4. Documentary Exhibits

In support of its position on DEIS-1-G, Applicant offered the following exhibits: Exhs. STP000001 to STP000003, Exhs. STP000005 to STP000008, Exh. STP000010, Exh. STP000028, Exh. STP000029, and Exhs. STP000032 to STP000035. These exhibits were admitted.[108]

Staff offered the following exhibits in support of its position on DEIS-1-G: Exhs. NRC00003A to NRC00003D (segmented FEIS), Exhs. NRC000031 to NRC000057, and Exhs. NRC000062 to NRC000072. These exhibits were admitted.[109]

Intervenors offered the following exhibits in support of their position on DEIS-1-G: Exh. INTR20001, Exhs. INT000002 to INT000004, Exh. INT000007, Exh. INT000009, Exhs.

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[106] Tr. at 1740; see Exh. NRC000032 (Professional Qualifications of Daniel C. Mussatti); Exh. NRC000033 (Professional Qualifications of Dr. Michael J. Scott); Exh. NRC000031 ("Prefiled Direct Testimony of Daniel C. Mussatti and Dr. Michael J. Scott Regarding Contention DEIS-1," "Affidavit of Daniel C. Mussatti Concerning Prefiled Testimony Regarding Contention DEIS-1," and "Affidavit of Dr. Michael J. Scott Concerning Prefiled Testimony Regarding Contention DEIS-1") (Mussatti/Scott Direct Testimony); Exh. NRC000062 ("Prefiled Rebuttal Testimony of Daniel C. Mussatti and Dr. Michael J. Scott Regarding Contention DEIS-1," "Affidavit of Daniel C. Mussatti Concerning Prefiled Rebuttal Testimony Regarding Contention DEIS-1," and "Affidavit of Dr. Michael J. Scott Concerning Prefiled Rebuttal Testimony Regarding Contention DEIS-1.") (Mussatti/Scott Rebuttal Testimony).

[107] Tr. at 1785; Exh. INT000002 (Resume of Philip Mosenthal); Exh. INTR20001 (Revised Direct Testimony of Philip Mosenthal and Affidavit) (Mosenthal Direct Testimony); Exh. INTR00041 (Revised Rebuttal Testimony of Philip Mosenthal and Affidavit) (Mosenthal Rebuttal Testimony).

[108] Tr. at 1456.

[109] Tr. at 1450, 1452, 1459.

INT000011 to INT000017, Exh. INT000019, Exh. INT000020, Exh. INT000040, and Exh. INTR00041. These exhibits were admitted.[110]

C. Legal Analysis and Findings

To resolve Contention DEIS-1-G, we must turn first to whether Contention DEIS-1-G (challenging the DEIS) was mooted by new analyses contained in the FEIS and second, whether new analyses performed for this adjudication disprove the contention and demonstrate a need for power from proposed STP Units 3 and 4.

1. Was Contention DEIS-1-G Rendered Moot?

a. Recitation of Evidence

Contention DEIS-1-G alleges that Chapter 8 of the DEIS failed to account for the reduced demand that could result from the implementation of proposed Texas energy efficient building code rules that were ultimately adopted on June 4, 2010.[111] Both Staff and Applicant emphasized that Texas' adoption of these rules postdated issuance of the DEIS. Given the timing of events, the Board admitted Contention DEIS-1-G as a "contention of omission,"[112] concluding 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."[113] At the hearing, one of Staff's witnesses, Mr. Scott, conceded that the DEIS did not consider the adoption of energy efficient building codes.[114]

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[110] Tr. at 1461, 1468, 1514-15.

[111] LBP-11-07, 73 NRC at __ (slip op. at 41-48); see also Motion for DEIS Contentions at 4.

[112] LBP-11-07, 73 NRC at __ (slip op. at 48).

[113] Id.

[114] Tr. at 1779.

Nevertheless, both Staff and Applicant witnesses maintained that the FEIS does consider the impact of Texas' new energy efficient building codes on the need for power from proposed STP Units 3 and 4.[115] Even so, only Applicant contended that, as a result, Contention DEIS-1-G is moot.[116] For Applicant, Mr. Pieniazek testified that, as part of a sensitivity analysis, the FEIS increased ERCOT's current energy efficiency adjustment (242 MW) by 5% of the change in cumulative growth from 2010 to 2012 and by 10% in and after 2013.[117] According to Mr. Pieniazek, the adjustment accounts for energy efficiency programs associated with new Public Utility Commission of Texas (PUCT) and municipal utility goals that are not accounted for in ERCOT's econometric modeling.[118] This approach, Mr. Pieniazek testified, quantitatively accounts for uncertainties in future demand reductions due to energy efficiency, which would include the energy efficient building codes.[119]

Mr. Pieniazek also testified that the FEIS qualitatively assessed the impact of energy efficient building codes in its recognition that, even though Texas adopted a new set of energy efficient building codes, "[t]here 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."[120] Furthermore, Mr. Pieniazek testified that the FEIS, in the course of responding to public comments, assessed building codes and concluded

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[115] Tr. at 1780 (Scott Testimony); Pieniazek Direct Testimony at 15; see also FEIS at 8-18.

[116] Applicant's Initial Statement at 9-13. As a legal matter, Staff contends that even if the FEIS does adequately address the energy efficient building codes it did not need to do so. Staff's Initial Statement at 36. Consequently, the question of mootness, from Staff's perspective, is irrelevant.

[117] Pieniazek Direst Testimony at 15 (citing FEIS at 8-26).

[118] Pieniazek Direct Testimony at 15.

[119] Pieniazek Direct Testimony at 15; Tr. at 1715-17.

[120] Pieniazek Direct Testimony at 15-16 (quoting FEIS at 8-26).

the impact, (1) would be speculative, as predicted in the ACEEE Report (cited by Intervenors in support of Contention DEIS-1-G), and (2) is already embodied in the ERCOT forecasts used as a foundation for the FEIS's need for power assessment.[121]

Recognizing these points, Intervenors argued that the FEIS still does not cure the omission in the DEIS because the FEIS only addressed the impacts of the new energy efficient building codes qualitatively and as part of a quantitative sensitivity analysis, rather than in the base forecasts.[122]

b. Legal Analysis and Findings

The Board finds that the FEIS's consideration of energy efficient building codes cures the DEIS's omission that formed the basis for Contention DEIS-1-G. As the Commission has stated

> [t]here is, in short, a difference between contentions that merely allege an ''omission'' of information and those that challenge substantively and specifically how particular information has been discussed in a license application. Where a contention alleges the omission of particular information or an issue from an application, and the information is later supplied by the applicant or considered by the Staff in a draft EIS, the contention is moot. Intervenors must timely file a new or amended contention . . . in order to raise specific challenges regarding the new information.[123]

Thus, to satisfy this contention of omission, the FEIS need only "consider" the issue.[124]

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[121] Pieniazek Direct Testimony at 17 (quoting FEIS at E-76 to -77).

[122] Tr. at 1859-60 (Mr. Eye, counsel for Intervenors); Intervenors' Initial Statement at 6-7; see also Tr. at 1829-30 (Mosenthal Testimony).

[123] Duke Energy Corp., CLI-02-28, 56 NRC at 382-83 (emphasis added).

[124] As a legal matter, the Commission has explained why a contention of omission may be cured:

> A significant change in the nature of the purported NEPA imperfection, from one focusing on comprehensive information omission to one centered on a deficient analysis of subsequently supplied information, warrants issue modification by the complaining party. Otherwise, absent any new pleading, the other parties would be left to speculate whether the concerns first expressed had been satisfied by the new information. Id. (quoting PFS, LBP-02-2, 55 NRC at 30) (emphasis in original).

In Chapter 8 of the FEIS, Staff acknowledged the new energy efficient building codes in Texas[125] and considered their impact both qualitatively and quantitatively. In Section 8.2, the FEIS summarized its position on why the new building codes are not likely to have a significant impact:

> Based on review team discussions with ERCOT staff and extensive examination of Texas public documents and 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. They are not included in Table 8-2. A portion of their possible effect is included in the review team's sensitivity tests depicted in Table 8-5.[126]

And in Section 8.3, the FEIS elaborated on its qualitative and quantitative analysis:

> The 2010 ERCOT firm load forecast was reduced following discussions with ERCOT forecasters concerning the potential impacts of a number of recent events on the 2010 forecast. To account for the entire unaccounted-for portion of new energy efficiency programs, the current 242 MW adjustment for HB 3693 programs was increased by 5 percent of the change in the cumulative growth from 2010 to 2012 in the ERCOT forecast for 2012 and by 10 percent in and after 2013. This additional adjustment accounts for new PUCT and municipal utility goals not captured by the ERCOT econometric forecast. 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 utilities had adopted the 2006 or even the 2009 version of the International Energy Conservation Code before the State did. The corresponding electricity savings

[125] The FEIS first acknowledges the new building codes in section 8.2:

> In addition, SECO [State Energy Conservation Office] 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. Some Texas municipal utilities that are in the ERCOT region but not directly regulated by the State are ahead of this schedule and some have a range of active energy conservation programs that have already saved significant amounts of electricity locally and project to save significantly more by 2020. FEIS at 8-18 (citations omitted).

[126] FEIS at 8-19 (citations omitted).

> 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.[127]

Therefore, the need for power analysis in the FEIS not only qualitatively considered the impacts of new energy efficient building codes, but also quantitatively adjusted the energy demand assessment to account for these impacts. As a result, Contention DEIS-1-G, alleging an omission of information, became moot with issuance of the FEIS's new analyses.

Following issuance of the FEIS, Intervenors had an opportunity to modify the contention or submit a new contention challenging the adequacy of Staff's consideration of the effects of the new building codes. They did not do so. So too, Applicant had an opportunity to move for summary disposition of the contention based on the FEIS's new analyses mooting the contention. It did not do so. As a result, we proceed to address and rule on the merits of Contention DEIS-1-G based on the full record of testimony and evidence before us.

2. Is there a Need for Power Given Savings from Energy Efficient Building Codes?

a. Recitation of Evidence

In calculating the potential savings due to Texas' adoption of energy efficient building codes, all of the parties referenced the 2007 ACEEE Report.[128] According to Intervenors' witness, Mr. Mosenthal, "[t]he ACEEE analysis was fairly simple." "[It] assumed a 15% improvement in all residential and commercial new construction electrical efficiency, starting in 2009 and continuing until 2019, at which point it assumed a 30% improvement for the following 4 years, resulting in a total peak load reduction of 2,362 MW in 2023," for Texas.[129]

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[127] Id. 8-25 to -26 (citations omitted).

[128] See Exh. STP000008.

[129] Mosenthal Direct Testimony at 6.

For Applicant, Mr. Pieniazek testified that he did not try to estimate the energy savings associated with building codes from scratch. Instead, he "corrected the savings that the Intervenors provided based on the latest and newest information."[130] Mr. Pieniazek testified that he started with the forecasted savings reported in the 2007 ACEEE Report, which Intervenors submitted in support of Contention DEIS-1-G.[131] He then adjusted those savings based on two considerations: (1) the reduction in growth estimates between the 2006 and 2010 ERCOT forecasts—by multiplying by 52.1%; and (2) the difference in service area between the ERCOT region and the entire State—by multiplying by 85%.[132] According to Mr. Pieniazek, this approach resulted in a corrected peak power savings of 1,046 MW in 2023.[133]

Staff took a similar approach; Staff witness Scott testified that he also started with the forecasted savings reported in the 2007 ACEEE Report and adjusted for four considerations: (1) the savings before 2011 (334 MW) that the ACEEE Report predicted, but which cannot be achieved because Texas did not implement the new codes until 2011; (2) the difference in service area between the ERCOT region and the entire State—by multiplying by 85%; (3) the difference between the 2006 and the 2010 ERCOT growth rate forecasts—by multiplying by 65.5%; and (4) the line losses, which were assumed to decrease linearly in the future from 6.2% in 2015 to 5.8% in 2020.[134] According to Mr. Scott, this approach resulted in a corrected peak power savings of 1,191 MW in 2023.[135] For comparison, Mr. Scott testified that this savings would represent 1.5% of summer peak demand and is also likely a bounding estimate of

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[130] Tr. at 1720.

[131] Tr. at 1720; Pieniazek Direct Testimony at 22.

[132] Tr. at 1721; Pieniazek Direct Testimony at 22-24.

[133] Tr. at 1721; Pieniazek Direct Testimony at 24.

[134] Tr. at 1768-69; Mussatti/Scott Direct Testimony at 35-37.

[135] Mussatti/Scott Direct Testimony at 39.

savings, given that true code savings depend on the effectiveness of training builders to meet the code, the quality of enforcement by code officials, and the amount of take-back by customers in terms of greater energy usage.[136]

So too, Intervenors' witness, Mr. Mosenthal, estimated savings due to Texas' adoption of energy efficient building codes by making adjustments to the reported savings from the ACEEE Report.[137] Mr. Mosenthal testified that he adjusted the reported savings for four considerations: (1) the savings before 2011, in light of the fact that Texas implemented the code in 2011, but the ACEEE Report assumed adoption in 2009; (2) the ratio of savings between the 2009 IECC (as embodied in the 2010 code update) and the 2001 IECC (existing practice), along with savings from future code updates in Texas; (3) the more recent 2010 ERCOT forecast instead of the 2007 ACEEE reference forecast; and (4) the lower code compliance rate of 80% for commercial buildings and 60% for residential buildings, which would increase to 90% in 2017 for both.[138] According to Mr. Mosenthal, 80% of load growth will be from new construction, not from increased energy use in existing buildings,[139] and therefore savings from energy efficient building codes would result in peak demand electricity savings of 494 MW in 2015 and 1,404 MW in 2020.[140] In his rebuttal testimony, Mr. Mosenthal further suggested that if savings from renovations were also included, which he did not include in his analysis, the savings would be two to three times greater.[141]

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[136] Mussatti/Scott Direct Testimony at 39.

[137] Mosenthal Direct Testimony at 6.

[138] Mosenthal Direct Testimony at 6-8.

[139] Tr. at 1813.

[140] Mosenthal Direct Testimony at 4, tbl. 1.

[141] Mosenthal Rebuttal Testimony at 10. As we discussed earlier, however, Mr. Mosenthal did not support his estimates of savings from renovations, which based on Staff's analysis we found to be small compared to the savings from new construction. See supra p. 17.

Although the parties varied in their approaches to calculating the savings in Texas from adopting energy efficient building codes, the parties did not dispute the FEIS's reported supply and demand of power in the ERCOT region.[142] According to Staff's witnesses, the FEIS principally considered the need for baseload generation[143] in the ERCOT region based on underlying ERCOT data.[144] In doing so, Mr. Scott testified that the FEIS indicates a need for power between 0 MW to 5,993 MW in 2015 and 5,115 to 17,551 MW in 2020, depending on whether retirements of plants greater than 50 years old are considered.[145] Staff's witness, Mr. Scott, testified that these are peak load values, although they can be correlated to baseload power by multiplying by a factor of 0.39.[146] With the correlation to baseload, Mr. Scott testified, there would be a baseload power need from 0 MW, with no plant retirements, to 2,337 MW, with the retirement of plants over 50 years old in 2015, and from 1,995 MW, with no plant retirements, to 6,845 MW, with the retirement of plants over 50 years old in 2020.[147] According to Mr. Scott, this means that in 2020, even without any plant retirements, there would be a need for at least one of the proposed STP units, and with the retirement of plants greater than 50

[142] See Mussatti/Scott Direct Testimony at 14-29 (Scott Testimony); Pieniazek Direct Testimony at 8-14; Mosenthal Direct Testimony tbls. 1, 2.

[143] According to Staff's witnesses, the focus of the FEIS is on baseload, rather than peak power, because the Applicant stated that the purpose of STP Units 3 and 4 is to provide baseload generation. Mussatti/Scott Direct Testimony at 13 (Mussatti and Scott Testimony). As a result, in the FEIS, the Staff considered the combined output of both proposed units at STP to be approximately 2,700 MW baseload. Mussatti/Scott Direct Testimony at 28, n.12.

[144] Mussatti/Scott Direct Testimony at 17-22.

[145] Mussatti/Scott Direct Testimony at 28.

[146] Mussatti/Scott Direct Testimony at 28. For Intervenors, Mr. Mosenthal, did not dispute baseload correlation, only that the energy efficient building codes could affect the provisions of baseload, not just peak power. See Mosenthal Direct Testimony at 11.

[147] Mussatti/Scott Direct Testimony at 28.

years old, there would be a need for baseload power generation equal to both proposed STP Units 3 and 4, plus two to three additional units.[148]

b. Legal Analysis and Findings

We find the ACEEE reported savings of 2,362 MW in 2023 to be an overestimate of the savings that the 2010 energy efficient building codes will achieve in Texas. All the parties agree that the analysis in the ACEEE Report is outdated, and that the ACEEE Report's projection of a 2,362 MW peak demand savings by 2023 relied on assumptions that rendered the estimated savings too high. The parties also agree that the ACEEE Report contains faulty assumptions in the following respects: (1) that the 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 and therefore a substantially lower potential for savings due to the new energy efficient building code);[149] (2) that the ACEEE Report 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);[150] (3) that the ACEEE Report assumes savings prior to the actual effective date of the new energy efficient building codes;[151] and (4) that the ACEEE Report assumes a 100% compliance rate with the new energy efficient building codes, which is not realistic or consistent with the assumptions currently made by Texas.[152]

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[148] Mussatti/Scott Direct Testimony at 28-29.

[149] Pieniazek Direct Testimony at 22-23; Mussatti/Scott Direct Testimony at 36-37; Mosenthal Direct Testimony at 7.

[150] Pieniazek Direct Testimony at 23-24; Mussatti/Scott Direct Testimony at 36-37; Mosenthal Rebuttal Testimony at 10.

[151] Pieniazek Rebuttal Testimony at 4-5; Mussatti/Scott Direct Testimony at 36, 38; Mosenthal Direct Testimony at 6.

[152] Pieniazek Rebuttal Testimony at 11-12; Mussatti/Scott Rebuttal Testimony at 4; Mosenthal Direct Testimony at 8.

In contrast, we find that Staff's and Applicant's estimated savings were a reasonable and bounding assessment of what the 2010 energy efficiency codes will achieve in Texas. First, although only Intervenors assumed less than 100% compliance with the building codes, both Staff and Applicant maintain this reduced rate is a reasonable adjustment.[153] It is reasonable to estimate that initial compliance will be well below 100%, but will increase to reach 90% compliance by 2017 (to account for the fact that Texas has committed to achieving a 90% compliance rate by 2017 to ensure receiving funds under ARRA). It is worth noting that the decision by Staff and Applicant not to discount the rate of compliance with the new codes is a conservative assumption, in that not reducing the compliance rate would increase potential energy savings.

Second, it was reasonable for both the Staff and Applicant to scale the ACEEE estimates to account for the ERCOT region's use of approximately 85% of Texas' electricity because the ACEEE Report was a projection for all of Texas. All the parties agree that the ERCOT region is the appropriate area of analysis and we so find.

Third, it was reasonable for both Staff and Applicant to base their savings calculations on current 2010 ERCOT data—as Intervenors did—instead of the 2006 ERCOT data that was used in the 2007 ACEEE Report. In 2006, ERCOT forecast significantly higher increases in demand than it now does. The potential savings from new building codes identified in the ACEEE Report were approximately proportional to ERCOT's predicted increase in demand. Today, ERCOT forecasts a significantly smaller increase in demand, and the potential savings identified by the ACEEE Report are correspondingly affected. Both Staff and Applicant offered reasonable adjustments: Applicant adjusted by 52.1% based on the ratio of 2023 peak demand predicted in 2010 relative to 2006; and Staff adjusted by 65.5% based on the 2010 ERCOT growth rate relative to the ACEEE Report growth rate. By the same token, it was not

[153] Mussatti/Scott Rebuttal Testimony at 4 (Scott Testimony); Pieniazek Rebuttal Testimony at 12.

reasonable for Intervenors to adjust their estimated savings by the ratio of the 2009 IECC savings relative to the 2001 IECC savings—representing the ratio of savings between the impact from the 2010 code update and alleged current practice. Even Intervenors' witness, Mr. Mosenthal, agreed that many local jurisdictions in Texas adopted energy efficient building codes prior to Texas' adoption in 2010, and therefore "some proportion of code savings are likely implicitly embedded in the ERCOT forecast."[154] Further, we find particularly credible Attachment 2 to the Direct Testimony of Staff witnesses Mussatti and Scott. It indicates that the population-weighted average code in effect in March 2010 in Texas was approximately equal to the IECC 2006 code.[155] And because we find that savings to be achieved from the statewide adoption of the 2009 building energy codes should be compared to the 2006 code rather than, as Intervenors assumed, the 2001 code, we find that Intervenors' estimates of savings overestimate the impacts of the codes.

Fourth, it was reasonable for Staff, Applicant, and Intervenors to shift the date when the codes became effective in Texas. The ACEEE Report assumed new building codes would take effect at the beginning of 2009. But as the witnesses for all parties testified, the new codes took effect in 2011 and 2012.[156]

Fifth, it was reasonable, albeit additionally conservative, for Staff to adjust the ACEEE reported savings upward by approximately 6% to account for line losses during transmission and distribution not considered in the ACEEE Report. This adjustment has the effect of increasing the calculated savings of the building codes.[157]

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[154] Mosenthal Rebuttal Testimony at 4.

[155] See Mussatti/Scott Direct Testimony at 30-32, attach. 2 (indicating the population-weighted, coded average was 2.99, compared to the IECC 2006 coded value of 3); see also Exh. STP000010.

[156] Pieniazek Direct Testimony at 18-19; Mussatti/Scott Direct Testimony at 29; Mosenthal Direct Testimony at 6.

[157] See Tr. at 1769.

In sum, while each of the three parties calculates savings due to the building energy codes by a different method, all reach the same basic conclusion that even though building codes will save power, there will remain a need for power in the ERCOT region between 2015 and 2020.[158] In terms of peak savings for new construction in 2015, Staff estimated a savings of approximately 600 MW, the Applicant approximately 500 MW, and the Intervenors approximately 500 MW.[159] In 2020, Staff estimated approximately 1,200 MW of savings, the Applicant approximately 850 MW, and the Intervenors estimate approximately 1,400 MW of savings.[160] Further, Staff conservatively estimated savings for new construction and retrofits due to the building codes to be approximately 1,600 MW peak in 2020.[161] Yet, given the overall peak demand in the ERCOT region of 70,517 MW in 2015 and 75,762 MW in 2020 and the inherent variability of long-term power forecasting, the parties' estimated savings are comparable.

As a consequence, we find that savings from energy efficient building codes are not sufficient to eliminate the need for power in the ERCOT region. Even accounting for the additional impact of renovations from Staff's conservative calculations, there is a need for power. Without any plant retirements, the need would be (638) MW in 2015 and 548 MW in 2020; with retirements of plants older than 50 years, the need would be 1,750 MW in 2015 and 5,398 MW in 2020.[162] While the need for baseload power in 2020 is somewhat less than the net generating capacity of proposed STP Units 3 and 4, when no retirements of existing plants are

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[158] Intervenors' witness, Mr. Mosenthal, conceded as much during the evidentiary hearing. Tr. at 1817.

[159] Mussatti/Scott Direct Testimony tbl. 4; Pieniazek Direct Testimony at 28-29; Mosenthal Direct Testimony tbl. 1.

[160] Mussatti/Scott Direct Testimony tbl. 4; Pieniazek Direct Testimony at 28-29; Mosenthal Direct Testimony tbl. 1.

[161] Exh. NRC000071 at 1.

[162] See id. at 1.

considered, consideration of plant retirements is reasonable. This is particularly so for plants older than 50 years, given that, on average, NRG Energy plants have been retired after only 39.5 years of operation since the market opened to competition in 2002.[163] Therefore, there is a need for power in the ERCOT region after reasonably accounting for savings from the new energy efficient building codes that could in part be satisfied by proposed STP Units 3 and 4.

D. Findings of Fact and Conclusions of Law

The Board has considered the testimony and evidence presented by the parties on Contention DEIS-1-G. Based upon a review of the entire record in this proceeding and the proposed findings of fact and conclusions of law submitted by the parties, and based upon the factual and legal analyses set forth above, which is supported by reliable, probative and substantial evidence in the record, the Board has decided all matters in controversy concerning this contention and makes the following findings of fact and conclusions of law. Staff has met its burden of showing that the FEIS for proposed STP Units 3 and 4, as supplemented by the record for this hearing, complies with the requirements of NEPA and 10 C.F.R. Part 51. The evidence confirms the claims of Staff and Applicant that there is a need for the power generated by proposed STP Units 3 and 4. As explained above, we find that Staff and Applicant have reasonably accounted for the impact of energy efficient building codes in Texas on the need for power assessment, as raised by Intervenors in Contention DEIS-1-G. Moreover, Staff and Applicant have reasonably justified the need for power that would be generated by proposed STP Units 3 and 4. Contention DEIS-1-G is therefore resolved in favor of Staff and Applicant.

Pursuant to 10 C.F.R. § 2.1210, it is this 29th day of February 2012, ORDERED, that:

A. The FEIS, as supplemented by the evidence introduced at the evidentiary hearing, adequately accounts for reduced demand caused by the adoption of energy

[163] See Pieniazek Rebuttal Testimony at 17-18; see also Tr. at 1723.

efficient building codes in Texas and demonstrates a need for power from proposed STP Units 3 and 4. Thus, Intervenors' Contention DEIS-1-G is resolved on the merits in favor of Staff and Applicant.

B. In accordance with 10 C.F.R. § 2.1210, this partial initial decision will constitute a final decision of the Commission forty (40) days from the date of issuance (or the first agency business day following that date if it is a Saturday, Sunday, or federal holiday, see 10 C.F.R. § 2.306(a)), i.e., on April 9, 2012, unless a petition for review is filed in accordance with 10 C.F.R. § 2.1212, or the Commission directs otherwise. Any party wishing to file a petition for review on the grounds specified in 10 C.F.R. § 2.341(b)(4) must do so within fifteen (15) days after service of this partial initial decision. The filing of a petition for review is mandatory for a party to have exhausted its administrative remedies before seeking judicial review. Within ten (10) days after service of a petition for review, parties to the proceeding may file an answer supporting or opposing Commission review. Any petition for review and any answer shall conform to the requirements of 10 C.F.R. § 2.341(b)(2)-(3).

THE ATOMIC SAFETY
AND LICENSING BOARD

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Gary S. Arnold
ADMINISTRATIVE JUDGE

/RA/

Randall J. Charbeneau
ADMINISTRATIVE JUDGE

Rockville, Maryland
February 29, 2011

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing **SECOND PARTIAL INITIAL DECISION (Contention DEIS-1-G) (LBP-12-05)** have been served upon the following persons by the Electronic Information Exchange.

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SECOND PARTIAL INITIAL DECISION (Contention DEIS-1-G) (LBP-12-05)

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[Original signed by Nancy Greathead]
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Dated at Rockville, Maryland
this 29th day of February 2012