

BLACKBURN CARTER

A Professional Corporation - Lawyers

4709 Austin Street, Houston, Texas 77004
Telephone (713) 524-1012 ♦ Telefax (713) 524-5165

www.blackburncarter.com

JAMES B. BLACKBURN, JR.

MARY W. CARTER

CHARLES W. IRVINE

ADAM M. FRIEDMAN

MARY B. CONNER

KRISTI J. DENNEY

JAMES B. BLACKBURN, JR.

Sender's E-Mail: jbb@blackburncarter.com

March 2, 2011

Michael M. Gibson, Chair, Administrative Judge *Via NRC's Electronic Information Exchange*
Atomic Safety and Licensing Board Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dr. Anthony J. Baratta, Administrative Judge *Via NRC's Electronic Information Exchange*
Atomic Safety and Licensing Board Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dr. Mark O. Barnett, Administrative Judge *Via NRC's Electronic Information Exchange*
Atomic Safety and Licensing Board Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

RE: Docket No. 52-042; NRC-2010-0165; *Exelon Nuclear Texas Holdings, LLC, Early Site Permit Application for the Victoria County Station Site, Notice of Hearing, Opportunity To Petition for Leave To Intervene, and Associated Order Imposing Procedures for Access to Sensitive Unclassified Non- Safeguards Information and Safeguards Information for Contention Preparation, 75 Fed. Reg. 71467 (Nov. 23, 2010).*

Dear Judge Gibson, Judge Baratta, and Judge Barnett:

As per the February 18, 2011 Order issued in connection with the above referenced matter, attached is TEXANS FOR A SOUND ENERGY POLICY'S CONSOLIDATED REPLY TO NRC STAFF AND EXELON NUCLEAR TEXAS HOLDINGS, LLC'S ANSWERS and accompanying ATTACHMENT 1.

Any question regarding this submission may also be directed to Charles W. Irvine, Blackburn Carter, P.C., 4709 Austin, St., Houston, Texas 77004 (713) 524-1012.

Sincerely,
BLACKBURN CARTER, P.C.

by s/James B. Blackburn, Jr.
James B. Blackburn, Jr.
*Counsel for Texans for a Sound
Energy Policy (TSEP)*

c: Per Certificate of Service attached to filing.

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

ASLBP No. 11-908-01-ESP-BD01

Michael M. Gibson, Chair	Dr. Anthony J. Baratta	Dr. Mark O. Barnett
Atomic Safety and Licensing Board Panel	Atomic Safety and Licensing Board Panel	Atomic Safety and Licensing Board Panel
U.S. Nuclear Regulatory Commission	U.S. Nuclear Regulatory Commission	U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001	Washington, D.C. 20555-0001	Washington, D.C. 20555-0001

In the Matter of

**EXELON NUCLEAR TEXAS
HOLDINGS, LLC**

**EARLY SITE PERMIT FOR
VICTORIA COUNTY STATION**

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§
§
§

Docket No. 52-042

**TEXANS FOR A SOUND ENERGY POLICY'S CONSOLIDATED REPLY TO NRC
STAFF AND EXELON NUCLEAR TEXAS HOLDINGS, LLC'S ANSWERS**

James Blackburn, Jr.
Charles W. Irvine
Mary B. Conner
BLACKBURN CARTER, P.C.
4709 Austin St.
Houston, Texas 77004
713/524-1012
713/524-5165 (fax)
jbb@blackburncarter.com
charles@blackburncarter.com
maryconner@blackburncarter.com

March 2, 2010

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ATTACHMENT

1: Declaration of Ronald L. Sass

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

ASLBP No. 11-908-01-ESP-BD01

In the Matter of	§	
EXELON NUCLEAR TEXAS HOLDINGS, LLC	§	
EARLY SITE PERMIT FOR VICTORIA COUNTY STATION	§	Docket No. 52-042

**TEXANS FOR A SOUND ENERGY POLICY’S CONSOLIDATED REPLY TO NRC
STAFF AND EXELON NUCLEAR TEXAS HOLDINGS, LLC’S ANSWERS**

Petitioner, Texans for a Sound Energy Policy (“TSEP”) hereby submits this Consolidated Reply to Nuclear Regulatory Commission Staff (“NRC Staff” or “Staff”) and Exelon Nuclear Texas Holdings, LLC’s (“Exelon”) Answers. In their respective Answers, both NRC Staff and Exelon agree that TSEP has standing and both agree that TSEP has submitted at least one admissible contention, therefore TSEP’s Petition and its request for a hearing should be granted. Furthermore, the objections of NRC Staff and Exelon to the remainder of TSEP’s Contentions should be denied and these Contentions admitted.

I. JURISDICTION & STANDING

Neither the NRC Staff nor Exelon contest the jurisdiction or standing of Texans for a Sound Energy Policy (“TSEP”). Therefore no reply is needed.

II. INTRODUCTION

In its Petition, TSEP detailed its profound concerns with the suitability of the site location for the Victoria County Station (VCS) in Victoria County. By their Answers, it is clear that the NRC Staff and Exelon agree that these concerns represent significant issues concerning the VCS’s site viability. In fact, the NRC Staff agreed to the admission of Contentions TSEP-

SAFETY-2 (growth fault movement) and TSEP-ENV 7 – 14 (impacts to Whooping Cranes and downstream bay ecosystem), as well as to the admission of portions of Contentions TSEP-SAFETY-1, 3 (growth faults; oil and gas wells), and TSEP-ENV-16 (alternatives analysis). For its part, Exelon has, to the best of TSEP's understanding, agreed to the admission of portions of Contentions TSEP-ENV-7, 8, 9, 11, and 12 (impacts to Whooping Cranes and downstream aquatic impacts on the bay and estuarine system). This Introduction provides an overview of the significant disputes.

With regard to the safety contentions, TSEP has established that there is genuine dispute over the location, number, and movement of growth faults, and it supported its position with expert analysis. TSEP also established that there is genuine dispute over the extent of active and abandoned oil and gas wells, and it supported its position with expert analysis. The NRC Staff agreed—agreed to the admission of a contention related to the sufficiency and accuracy of Exelon's data on these issues. However, the Staff (and Exelon) did not agree to the admission of TSEP's discussion of the safety-related *consequences* of the growth fault issue or the oil and gas well issue.

In this Reply, TSEP explains that the threshold issue for these contentions is the sufficiency of the data related to the growth faults and oil and gas wells that Exelon presented and relied upon. TSEP has plainly met this threshold. The precise nature of the safety-related consequences from the data will continue to be litigated later in these proceedings, after there is agreement among the parties over the accuracy of the baseline facts related to the faults and wells. The safety-related consequences that TSEP discusses (based on its expert's analysis and report) represent the most notable of a range of consequences. Of course, the full range of consequences cannot be known until the parties agree on the baseline facts. Should a revised set

of facts emerge due to these contentions, and Exelon amends its SSAR, then NRC regulation, 10 C.F.R. § 2.309(f)(2), governs new information and allows a petitioner to amend a contention or file a new contention, when there is new information.

The important point is that, at this juncture, TSEP has established a genuine dispute with the applicant over the growth faults and oil and gas wells; that the NRC Staff recognizes and agrees the dispute exists and warrants consideration; and that the Contentions TSEP-SAFETY 1, 2, and 3 should be admitted.

With regard to TSEP-SAFETY-4, for purposes of this introduction, TSEP observes that Exelon and the NRC Staff cannot honestly argue that water availability is not as safety issue when Exelon itself discusses water availability in various safety portions of its application. (For example, SSAR § 2.4.11).

With regard to the environmental contentions, there is no question that water availability issues are a reason for profound concern at the VCS site. Because both Exelon and the NRC staff have accepted some of the water-related aquatic-impact contentions, TSEP contends that, at this reply stage, the issue is now how extensive the examination of the water issue should be, rather than whether or not genuine disputes of fact (or law) exist regarding water. Clearly, they do. And importantly, NEPA and the NRC regulations and NRC case law provide good reason that all of TSEP's water availability contentions should be admitted for consideration. NEPA has been interpreted by the courts to be broad in both scope and purpose.¹ NEPA mandates honest and full disclosure for the federal decision-maker.² NRC regulations require full consideration of NEPA, and also the weighing of environmental benefits and costs.³ In NRC precedent, the Board has

¹ See "TSEP-ENV-16 "for a discussion of case law.

² See "TSEP-ENV-2 – 6, and 7 – 14; – Reply to Both NRC Staff and Exelon on Water Availability-related Contentions Generally" for the related discussion.

³ 10 C.F.R. § 51.105(a)(1) and § 51.105(a)(3).

previously considered water availability issues.⁴ All of these considerations call for the Licensing Board’s full and fair examination of water availability in these proceedings and for the admission of all of TSEP water availability contentions (TSEP-ENV-2 – 14).

TSEP observes that some of its contentions (perhaps particularly those on water availability) are closely related and perhaps even overlap on some issues. TSEP identified these issues in separate contentions for the Licensing Board’s benefit, so that it would be absolutely clear what the important safety or environmental consideration was.

TSEP also offers some important general observations about the NRC Staff and Exelon Answers. TSEP notes that portions of their Answers are “schizophrenic” and are a reason for the Board to read the Answers with careful scrutiny. For example, the Staff denies the basis of fault movement in TSEP-SAFETY-1, but then does not oppose the very same issue in TSEP-SAFETY-2. As another example, NRC Staff states that TSEP does not challenge the ER’s finding regarding salinity in TSEP-ENV-6, but then Staff does not oppose exactly that in the next eight contentions on exactly those topics. With respect to both NRC Staff and Exelon, both parties sometimes discuss their responses in isolation, as if other contentions and their other answers do not exist; this was true for the contention on climate change (TSEP-ENV-6).

With regard to the Exelon Answer, there is a fundamental disconnect in Exelon’s position on the Whooping Cranes. Exelon states that it does not object to the admission of a consolidated contention concerning the disputed Whooping Crane issues, but then disavows clearly disputed portions of TSEP’s Petition which highlight those very issues. Importantly, the Licensing Board’s review of the ESP application is the Board’s sole opportunity for review of impacts by the VCS station on the Whooping Cranes. It is the Licensing Board’s opportunity to scrutinize,

⁴ See “TSEP-ENV-2 – 6, and 7 – 14; – Reply to Both NRC Staff and Exelon on Water Availability-related Contentions Generally” for the related discussion.

for example and among other things, the junk science of the SAGES report (relied upon by Exelon); the water flow that is vital to Whooping Cranes and their habitat; and compliance with the Endangered Species Act. The Whooping Crane is a flagship species, and all of these Contentions, ENV-7, 8, 9, 10, 11, 12, 13, and 14, should be admitted as separate contentions, at this juncture, in order to fully analyze these crucial issues.

Finally, both the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 *et seq.*), and the National Environmental Policy Act (42 U.S.C. § 4331 *et seq.*) are intended to protect the public and the environment. TSEP's contentions echo these overarching considerations, and TSEP urges the Board that all its contentions raise significant issues about site suitability pursuant to these two statutes and should be admitted.

III. ARGUMENT IN REPLY

In their respective Answers, both Staff and Exelon grossly exaggerate NRC's contention requirements for a petitioner such as TSEP. The NRC rules are very clear about what TSEP's obligations actually are: at the contention stage, a petitioner only needs to make "a minimal showing that material facts are in dispute," and that the support offered for a contention "need not be in affidavit or formal evidentiary form and need not be of the quality necessary to withstand a summary disposition motion." 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989). This is important: TSEP's Petition need not be of the same detail and with the same support as would be necessary for a summary disposition motion. In NRC proceedings, a petitioner "is not require[d] ... to prove its case at the contentions stage." *Yankee Atomic Elec. Co.* (Yankee Nuclear Power Station), LBP-96-2, 43 NRC 61, 249, *rev'd in part on other grounds*, CLI-96-7, 43 NRC 235 (1996) (citing 54 Fed. Reg. at 33,171). Here, TSEP's contentions meet and in fact far exceed these "minimal" requirements of 10 C.F.R. § 2.309(f).

All that 10 C.F.R. § 2.309(f)(1)(iv) & (v) requires for a petitioner when pleading a contention is to “[d]emonstrate that the issue raised in the contention is material to the findings the NRC must make to support the action that is involved in the proceeding” and “provide a concise statement of the alleged facts or expert opinions” that supports the petitioner’s position. TSEP’s contentions, which do provide both facts and expert opinions, are far superior to the vague and general contentions rejected in the cases cited by Staff and Exelon throughout their Answers.

Importantly, “the support for a contention may be viewed in a light that is favorable to the petitioner and inferences that can be drawn from evidence may be construed in favor of the petitioner.” *Entergy Nuclear Vermont Yankee et al (Vermont Yankee Nuclear Power Station)*, LBP-06-20, 64 NRC 131, 150 (2006) (citing *Arizona Public Service Company (Palo Verde Nuclear Station, Units 1, 2, and 3)*, CLI-91-12, 34 NRC at 355 (1991)). The NRC’s pleading rules require merely that a petitioner provide a simple nexus between the contention and the referenced factual or legal support. *See* 10 C.F.R. § 2.309(f)(1)(v). A petitioner satisfies 10 C.F.R. § 2.309(f)(1)(vi) by identifying the portions of the application being challenged or the information omitted, supporting reasons for the dispute, and the regulations or statutes not being met. TSEP has plainly done all of these things. In fact, it has exceeded these minimal requirements, and NRC Staff and Exelon’s specious arguments concerning TSEP’s alleged shortcomings in pleading must fail.

Organization

For most of the contentions, TSEP replies first to the NRC Staff’s Answer and then to Exelon’s Answer. For certain contentions, and so as to avoid duplication, TSEP responds to both Answers in one reply. Where appropriate, TSEP provides additional replies for multiple

contentions. With regard to Exelon’s Answer that proposes the admission of a single, multipart, consolidated contention on aquatic impacts and impacts on endangered Whooping Cranes and their habitat, TSEP addresses this proposal separately as well.

REPLIES TO SAFETY CONTENTIONS

TSEP-SAFETY-1 – Inadequate Identification of Growth Faults

A. Statement of the Contention itself

The Exelon application does not satisfy the requirements of 10 C.F.R. § 100.23(d)(2) because it does not provide sufficient geological data regarding growth faults or present an adequate evaluation of the potential for subsurface deformation. As result, Exelon underestimates the risk of surface deformation.

B. Reply to NRC Staff

The NRC Staff position is that this Contention is admissible in part and inadmissible in part. The Staff agrees to admit the portion of this Contention that challenges whether Exelon provided sufficient geological data regarding growth faults and whether Exelon adequately evaluated the potential for subsurface deformation, in accordance with 10 C.F.R. § 100.23(d)(2).⁵ The NRC Staff agrees that Exelon has not satisfied this regulation.

However, the Staff disagrees with the admissibility of other portions of TSEP’s Contention-SAFETY-1 because, they say, those portions are not material, they lack factual support, and they do not identify a genuine dispute.⁶ The NRC Staff argues that the portions of the Contention discussing the safety-related implications of the growth faults should be deemed inadmissible. In this respect, Staff puts the cart before the horse. One must have the information—accurate and sufficient—before one can determine whether the information has

⁵ Petition at 11. The Application must contain “Sufficient geological, seismological, and geophysical data must be provided to clearly establish whether there is a potential for surface deformation.” 10 C.F.R. § 100.23(d)(2). “In order to determine whether a nuclear power plant is required to be designed to withstand the effects of surface faulting, the location of the nuclear power plant with respect to capable faults shall be considered.” 10 C.F.R. § 100, App. A, § V.(b).

⁶ NRC Staff Answer at 9–10.

significance from the safety perspective. This ESP proceeding is to determine site suitability, and basic information about the site is critical to that determination because the safety-related implications will follow.

With regard to the portions of the Contention that Staff opposes, TSEP first notes that, as a general matter, certain safety implications of Exelon's insufficient growth fault data were discussed because they call attention to the importance and materiality of the Contention. Safety implications are directly related to the sufficiency of data; that is, if the data is insufficient or inaccurate, the full safety implications cannot be known. It is inconsistent for the NRC Staff to accept TSEP's challenge to the sufficiency of the data and then dismiss any of the possible safety implications. Moreover, the safety implications that TSEP articulated represent a range of possible issues, and at this stage of the proceeding, TSEP need only show a disputed issue with the applicant; TSEP has done so in showing a difference of expert opinion concerning the sufficiency of data of the growth faults. The precise nature of the safety implications are reserved for later in the proceedings, after the core of the contention has been admitted, when the safety implications are litigated.

Stated another way, if after further litigation on this issue, Exelon does revise its SSAR to more accurately identify and describe the location and characteristics of the growth faults, TSEP at that time may seek leave to file a new safety contention based on that new information. NRC regulation, 10 C.F.R. § 2.309(f)(2), governs new information and allows a petitioner to amend a contention or file a new contention, when there is new information.

Second, it is worth noting that Exelon's application contains no graphic, map or detailed information that readily allows TSEP (or the public) to see the precise location of Exelon's identified faults with respect to the cooling pond and other plant infrastructure. As a result, some

of the safety implications of the insufficient data may be unknown. So, the precise proximity of the faults to the plant's various features is unknown—and consequently, the full investigation of the faults and the potential for surface and subsurface deformation is critical, in order to accurately evaluate safety.

1. Threat to Cooling Pond and Seepage From Cooling Pond

According to the currently proposed location of the cooling pond, one growth fault—Growth Fault “D”—crosses the cooling pond. TSEP alleged that, should this growth fault cross the proposed location for the cooling pond, the potential surface deformation could pose a threat to the integrity of the cooling pond. TSEP also alleged that the SSAR did not sufficiently evaluate the possibility that seepage from the pond into the fault zone could cause activation of the fault. These allegations were based on assertions by TSEP's expert engineers and thus have support.

TSEP hired an expert to investigate the presence and movement of growth faults. This expert rendered a professional engineering opinion that these faults represent a threat to the safe operation of the plant, specifically the cooling pond. At this stage of the NRC proceeding, TSEP is only required to demonstrate that a disputed issue exists that is within the scope of the proceeding and that the issue raised is material to the findings the NRC must make. TSEP satisfied this threshold by showing a dispute with the sufficiency of the seismic data that Exelon provided. In its Answer, and by not objecting to the core of TSEP-SAFETY-1, the NRC Staff implicitly agreed that TSEP crossed this threshold. The allegations that TSEP did make were supported by the conclusions of its expert. As TSEP continues in these proceedings, and obtains admission of its contentions, the further and precise safety implications will be litigated.

NRC Staff argue that TSEP did not explain expert support for the assertion that there is a threat to the cooling pond and that TSEP did not show how the movement of growth faults would impact plant safety. However, TSEP's expert did aver that there is a threat to the cooling pond and to plant safety.⁷ TSEP has shown a dispute on this issue and any future disagreement over the consequences can be developed with additional experts at a later stage of these proceedings.

Importantly, the substance of the disagreement is the location and movement of the faults (TSEP-SAFETY-1 and 2)—and before the parties can debate the impacts of the growth faults, there must be factual agreement on the substantives issue, namely the location and rate of movement. If TSEP is correct that Exelon's data is insufficient and needs to be amended, then the application will have to be revised, which gives TSEP a basis to review the new information and develop a new or amended safety contention as necessary.

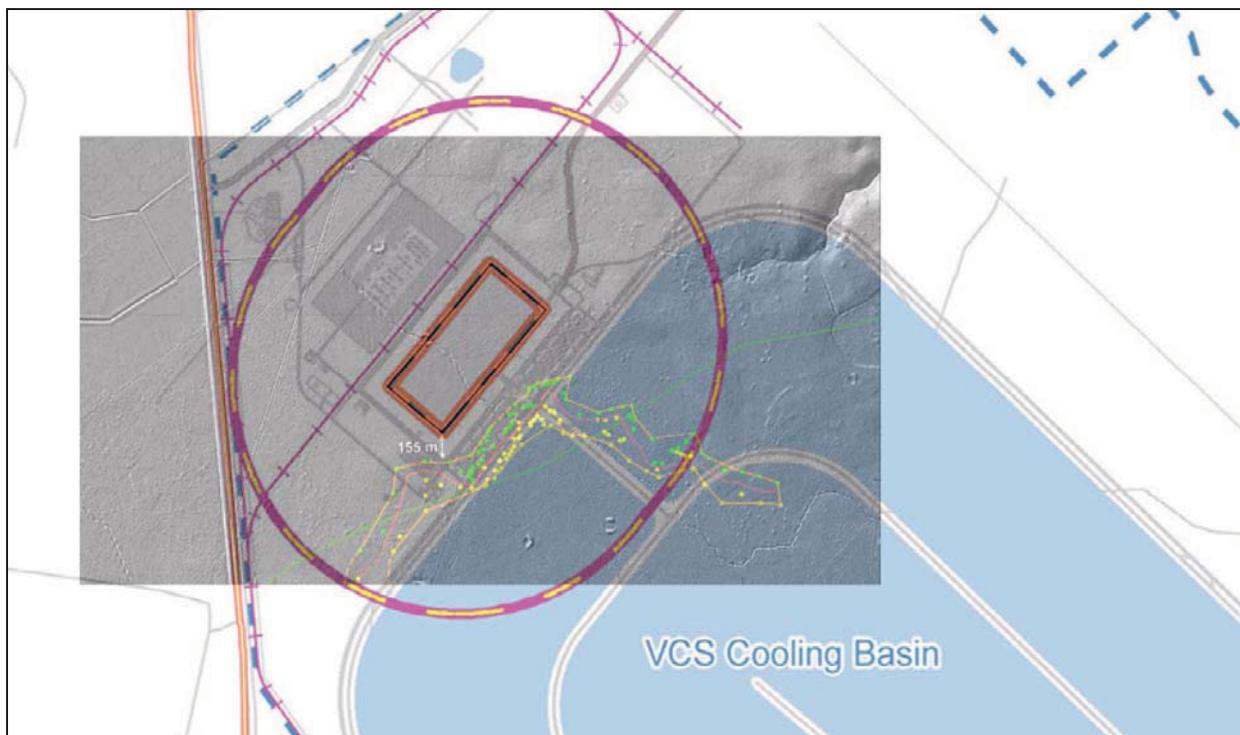
Moreover, TSEP observes that Exelon has only analyzed a breach of the cooling pond in two locations—two locations that do not appear to actually be over the Growth Fault D at issue.⁸ ER 2.4.4.1.2 (dam breach analysis for the northeast embankment, ER Figure 2.4.4-25, and the northwest embankment, Figure 2.4.4-28). TSEP estimates that these breach locations are not where the surface deformation of Fault D is found. As alleged by TSEP, the Application only shows the location of Fault D with respect to the outline of the powerblock.⁹ To illustrate this point, TSEP has overlaid two of Exelon's own figures from the Application. ER Figure 2.1-4 shows the site and the important feature such as the powerblock, and the cooling pond. ER Figure 2.5.1-43 shows the location of Fault D and the powerblock. For illustrative purposes only,

⁷ Petition at 13–14; Petition Ex. D-2, JCHA Report, at 108, 113.

⁸ To be clear, TSEP is not contesting the dam breach analysis undertaken by Exelon as presented in Application in SSAR 2.4.4.2.2.

⁹ ER Figure 2.5.1-43.

and understanding the result is an approximation, TSEP created the following figure, overlaying the images:¹⁰



What this figure clearly shows is that the surface deformation of Fault D lies (as TSEP alleged in its Contention) along the northern embankment of the cooling pond directly adjacent to the powerblock. Exelon did not perform a dam breach analysis at this location. If, after litigation, Exelon revises its Application to more accurately identify growth fault locations, TSEP may seek leave to amend its Contention or file a new Contention challenging the adequacy of the dam breach analysis because Exelon failed to consider a breach at the actual location of a growth fault.

Consequently, TSEP has identified a safety issue regarding the impact of the fault on the cooling pond, an issue which has important safety consequences unanalyzed by Exelon.

¹⁰ TSEP is not representing that this figure is a geo-referenced overlay, merely that it is approximation based on the information in the Application and currently available.

2. The Cooling Pond as Safety Feature

The NRC Staff (and Exelon) argue that any growth fault movement under the cooling pond is immaterial because the cooling pond is not a safety feature and that, therefore, there would be no adverse effect on any safety related function. TSEP urges that the safety inquiry for Part 100 is a broad one (*i.e.*, includes features throughout the site's footprint). In this respect, the location and movement of growth faults is important in order to make sure all the information that might bear on the safety analysis is sufficiently and accurately presented. This is especially relevant in an Early Site Permit ("ESP") proceeding because it could be years, or even decades, before the decision to build is made. At that time, the persons designing the plant and its infrastructure might be the children or grandchildren of those who submitted the ESP Application, and consequently they may redesign or re-locate structures on the site.

As the commentary to NRC regulations discusses, "The design basis for the surface faulting shall be taken into account in the design of the nuclear power plant by providing reasonable assurances that in the event of such displacement during faulting certain structures, systems, and components will remain functional."¹¹ These structures and systems are those necessary to ensure "the capability to prevent or mitigate the consequences of accidents which could result in potential offsite exposures comparable to the guideline exposures of this part." In other words, this guidance suggests a broader scope: there is infrastructure in the plant, beyond simply the power grid, that needs to remain functional to prevent offsite consequences should a growth fault undergo seismic activity.

In its Answer, Exelon quoted from Section IV(b) of Appendix S to Part 50, governing "Surface Deformation."¹² In pertinent part, the discussion states: "The potential for surface

¹¹ 10 C.F.R. § 100 App'x A, § VI.(b)(3).

¹² Exelon Answer at 16.

deformation must be taken into account in the design of the nuclear power plant by providing reasonable assurance that in the event of deformation, certain structures, systems, and components will remain functional.... The design provisions for surface deformation must be based on its postulated occurrence in any direction and azimuth and *under any part of the nuclear power plant*, unless evidence indicates this assumption is not appropriate, and must take into account the estimated rate at which the surface deformation may occur.” (Emphasis added). Again, the appendix indicates a broader inquiry for safety than the one urged by the NRC Staff and Exelon.

With regard to the regulations, it bears noting that, in requiring the investigation of hazards such as surface deformation from faults, they do not limit this investigation to only the power grid area. For example, in the 1996 amendments to the rule, the preamble states:

Siting factors and criteria, however, are important in assuring that radiological doses from normal operation and postulated accidents will be acceptably low, *that natural phenomena and potential man-made hazards will be appropriately accounted for in the design of the plant*, that site characteristics are such that adequate security measures to protect the plant can be developed, and that physical characteristics unique to the proposed site that could pose a significant impediment to the development of emergency plans are identified. The Commission also has had a long standing policy of siting reactors away from densely populated centers, and is continuing this policy in this rule.

Final Rule, Reactor Site Criteria Including Seismic and Earthquake Engineering Criteria for Nuclear Power Plants, 61 Fed. Reg. 65,157, 65,161 (Dec. 11, 1996) (emphasis added). The preamble discusses the “design of the plant” not only the design of the power grid, the cooling pond, or other specific and narrow feature; clearly, the entire site footprint is important.

Finally, the cooling pond is an essential element of the proposed design of the VCS plant. If the cooling pond cannot operate as intended, due to the location and movement of the growth faults, then this is a clear safety issue. The regulations contemplate this, and this is an important issue that should be part of this Contention.

3. Flood of the Reactors

The NRC Staff argues that TSEP failed to provide factual support or dispute the dam breach analysis in the SSAR. Again, TSEP's attempt to preclude this issue is premature because the information contained in the SSAR may be, as Staff concedes, insufficient. New information developed in litigating this Contention may raise safety-related flooding issues, and require additional analysis by Exelon or further litigation through a new contention.

TSEP's expert offered a range of possible consequences for surface deformation caused by the growth faults. Among those possible consequences was the flooding of the reactors. As stated above, because Exelon's Application does not sufficiently describe growth fault locations, TSEP estimated that Fault D is located along the northern embankment of the cooling pond and directly adjacent to the powerblock. Exelon presented no dam breach analysis for a potential failure of the embankment at the location of this growth fault. Once the parties have litigated and agreed on the locations of the growth faults, Exelon, or the NRC Staff may decide, based on new information, that an additional dam breach analysis is required, or TSEP may file a new contention.

As stated, the important point is that TSEP has established a genuine issue of disputed fact and called the sufficiency of Exelon's growth fault data into question. Before the full range of the consequences may be explored, the parties must agree on the identification and rate of movement of the faults. The range of consequences may be litigated at a later stage in the proceeding.

C. Reply to Exelon

Exelon objects to the admission of this contention because, according to Exelon, the contention does not raise a genuine dispute of material fact. Exelon argues that their

identification of the growth faults, based on the 2D seismic data, is sufficient, that the failure of the cooling pond is not a safety issue, and TSEP does not dispute their dam breach analysis. However, for the reasons discussed below, Exelon's position is without merit.

First, it is clear that there is a genuine dispute about the sufficiency of Exelon's data on growth faults. Exelon conducted 2D seismic data and identified two growth faults. TSEP's expert consultant conducted more sophisticated 3D seismic data and identified two or more (possibly up to four) growth faults with surface manifestations. (The rate of movement is disputed too, and is raised in TSEP-SAFETY-2.) Second, there is also a dispute concerning the significance of the growth faults. Exelon states that "growth faults do not present any significant seismic hazard."¹³ TSEP disputes this statement, and believes that Exelon's claim is belied by the investigations conducted by TSEP's expert.¹⁴

Third, Exelon states that "the regulations only require that such potential [for growth faults] be identified and accounted for in the design."¹⁵ However, Exelon misses the importance of TSEP's dispute with the sufficiency of Exelon's data. If Exelon has not correctly or sufficiently evaluated the presence and movement of the growth faults, then necessarily Exelon cannot accurately account for any risks in its plant design.

1. Exelon's Information on Growth Faults in the VCS Area

As an initial matter, TSEP notes that Exelon discusses tectonic faulting, but this is not the type of faulting that is the critical issue in this case. TSEP underscores that the critical issue is surface deformation. As an aside, TSEP's expert did discuss how a distant earthquake may cause surface deformation along existing growth faults, and this may be a related issue.¹⁶

¹³ Exelon Answer at 15.

¹⁴ TSEP Petition at 12-14.

¹⁵ Exelon Answer at 17.

¹⁶ Petition, Ex. D-2, JCHA Report, at 113.

Exelon argues that the differences in the projected offsets between Exelon’s data and TSEP’s data are due to TSEP mixing up two concepts. TSEP’s expert did not mix up concepts, and is aware of the distinction between offsets at the surface and those below the surface. The important take away from the JCHA Report, and one of the critical issues missing from Exelon’s analysis, is that there has been significant recent movement of the growth faults in the last 50 years. The faults that are at the surface are active now and in the recent past, and show a greater offset. This is the point of disagreement.

According to Exelon, it “agrees that the risk associated with growth faults is the potential for failure or damage to the VCS structures constructed on top of these growth faults.”¹⁷ TSEP notes this agreement by Exelon about the risks associated with the faults.

2. Exelon’s Arguments on the Cooling Basin

Exelon focuses on the fact that faults are not under the power block. TSEP incorporates its arguments from the NRC Staff discussion above (Section B.2). Specifically, TSEP urges that, for all the reasons and based on all the authority earlier provided, the safety inquiry in Part 100 is a broad one. It is not narrowly limited to the power block. At this stage, until the parties agree on the identification and rate of movement of the growth faults, open questions remain about the safety implications of the faults.

Moreover, a chief concern with growth faults is not simply their location but the rate of movement. Consequently, there may well be critical safety implications regarding whether the growth fault is directly under the cooling pond, or whether it is somewhere in between the cooling pond and the power block (which is where TSEP’s expert believes Growth Fault D is located)—should the rate of movement be significant.

¹⁷ Exelon Answer at 16.

Finally, this situation is wholly distinguishable from the *Bellefonte* case. In that case, the Petitioner had no expert report backing up its assertions and, moreover, the existence of the caves and sinkholes was only “possible” and “undetected.”¹⁸ By contrast, TSEP has provided an expert engineering report that interpreted 3D seismic data to identify two (and possibly four) growth faults that traverse on or near the VCS site. Because these growth faults have explicitly been detected and their identification was cited with reference to an expert opinion, this situation is nothing like the *Bellefonte* case.

D. Summary of Disputed Basis for Contention

Without question, there is a genuine dispute concerning the sufficiency of Exelon’s data regarding the identification of growth faults on and near the Victoria County Station and their potential for subsurface deformation. The NRC Staff concedes this.¹⁹ Exelon tries to argue that there is not a genuine dispute by pointing to discussion in the SSAR on growth faults. Plainly, there is a dispute concerning the number, location, and rate of movement of the faults; and Exelon’s arguments therefore must fail. TSEP outlined safety considerations which follow from these disagreements, and supported those various illustrative considerations with citations to its expert report.

TSEP-SAFETY-2 –Rate of Recent Surface Movement at Growth Faults

A. Statement of the Contention itself

Exelon fails to satisfy 10 C.F.R. § 100.23(d)(2) because the SSAR greatly understates the rate of recent surface movement of the growth faults, as established by field studies showing rates of movement 1,000 to 10,000 times greater than Exelon estimates.

¹⁸ *In re Tenn. Valley Authority*, LBP-08-16, 68 NRC 361, 391 (2008).

¹⁹ NRC Staff Answer at 9.

B. Reply to NRC Staff

The NRC Staff does not object to the admission of this Contention.²⁰

C. Reply to Exelon

Exelon opposes the admission of this Contention and argues that the Contention does not raise a genuine dispute of material fact. The basis for Exelon's argument is that TSEP's experts focused on Growth Fault E, which is located offsite, instead of Growth Fault D, which is located onsite.

TSEP's experts completed their analysis of Growth Fault E because they did not have access to the VCS property (*i.e.*, no access to Growth Fault D) but did have access to the land traversed by Growth Fault E. Once this Contention is admitted, during the discovery period of these proceedings, TSEP is prepared to go onto the VCS site in order to develop analysis of Growth Fault D.

It is clear that from TSEP's fieldwork analysis of Growth Fault E that it is entirely reasonable to extrapolate those findings to Growth Fault D. It is reasonable to hypothesize that growth faults within the same region would have similar characteristics. The NRC Staff recognized the movement and seismic characteristics of these growth faults as a significant issue, which is why the NRC requested additional information on the matter.²¹ The NRC Staff agreed to admit this Contention in its entirety.

Exelon erroneously characterizes TSEP's field work as only observations of changes in the surface of roads. This is simply not true and is a gross mischaracterization by Exelon. In fact, TSEP's experts did two rounds of field work; the first involved investigating deformations at the

²⁰ NRC Staff Answer at 16.

²¹ See Petition at 18.

road surface and also cores samples for radiological dating.²² TSEP's expert conducted further field work resulting in more accurate radiological dating data on the second round.²³ All of the TSEP data confirmed roughly eight inches of movement over an approximately 40 year period.²⁴ Exelon presented absolutely no field work of its own with respect for rate of surface deformation²⁵—consequently, this represents a genuine disputed issue.

Moreover, Exelon's arguments ignore the clear directive of the NRC regulations that mandate sufficient geological, seismological and geophysical data. That is, Exelon presses the point that the growth faults would not impact the safe operation of the plant. But, without sufficient and accurate data, Exelon's conclusion rings hollow. The regulations require sufficient and accurate data in order to evaluate safety considerations. TSEP's Contention properly raises a concern of insufficient data to evaluate growth faulting, and should be admitted.

TSEP-SAFETY-3 – Dangers From Oil and Gas Wells and Borings

A. Statement of the Contention itself

Exelon's SSAR fails to provide adequate data or an adequately reasoned evaluation of the threats of explosion and seepage of poisonous gas posed by the existence of hundreds of active and abandoned oil and gas wells and borings on and near the VCS site.

B. Reply to NRC Staff

The NRC Staff position is that this Contention is admissible in part and inadmissible in part. The Staff agrees to admit the portion of this Contention that challenges whether Exelon fully described the active and abandoned oil and gas wells and borings on the VCS site, in accordance with 10 C.F.R. Part 100 and RG 1.70. However, the Staff rejects other safety-related

²² Petition at 17.

²³ Petition at 17.

²⁴ Petition at 16–17.

²⁵ Petition at 17–18; Exelon letter of August 16, 2010, responding to RAI Question 02.05.01-1, available at http://adamswebsearch2.nrc.gov/idmws/doccontent.dll?library=PU_ADAMS%5EPBNTAD01&ID=102730203 (relying only on long-term estimations over 100,000 years).

portions of TSEP-SAFETY-3 because those portions are allegedly not within the scope of the hearing, or allegedly not sufficiently supported by facts, or because there is no dispute.²⁶ However, one must have the information—accurate and sufficient—in order to determine whether it has significance from the safety perspective. This ESP proceeding is to determine site suitability, and therefore basic information about the site is critical to that determination.

As with TSEP-SAFETY-1, with regard to the portions that Staff rejects, TSEP elaborated on certain safety implications of Exelon’s insufficient oil and gas well data because the safety implications call attention to the importance and materiality of the Contention. Safety implications are directly related to the sufficiency of data. It is inconsistent for the NRC Staff to accept TSEP’s challenge to the sufficiency of the data and then dismiss any of the possible safety implications. Moreover, the safety implications that TSEP articulated represent a range of possible issues; at this stage of the proceeding, TSEP need only show a disputed issue with the applicant and TSEP has done so in showing a difference of expert opinion concerning the sufficiency of data. The precise nature of the safety implications are reserved for later in the proceedings, after the core of the Contention has been admitted, when the implications are litigated.

Stated another way, if after further litigation on this issue, Exelon does revise its application to more accurately identify and describe the oil and gas wells, TSEP may then seek leave to file a new safety contention based on that new information.²⁷

1. Explosions and Upward Migration of Hydrocarbons

As TSEP demonstrated and the NRC Staff agreed, there are significant data gaps with respect to oil and gas wells on the VCS site. The database of information that Exelon relied on

²⁶ NRC Staff Answer at 17.

²⁷ 10 C.F.R. § 2.309(f)(2).

was not adequate. Exelon relied on an insufficient, historical, state database, but the NRC regulations require full investigation into a property's features such as oil and gas wells.

The NRC Staff takes issue with TSEP's claim that explosions from abandoned wells are possible, pointing to the SSAR's conclusion that the potential hazards are bounded. The important point is that TSEP's expert provided a range of illustrative consequences that may result from the significant data gaps concerning oil and gas wells (or relatedly, numerous improperly plugged or abandoned oil and gas wells). Because of the significant data gaps, the range of possible safety consequences is unknown, and TSEP therefore reasonably contests Exelon's conclusion that the potential hazards are bounded. As a result, it is critical to have full information about the wells in order to accurately evaluate the possible safety consequences.

The NRC Staff also states that the SSAR explains the limits of the potential hazards and that TSEP has failed to explain why the SSAR rationale was flawed. The flaw in the NRC reasoning here is that the NRC Staff is uncritically assuming that the SSAR data is accurate and complete—even after it has agreed that the data gaps warrant admission of the Contention in part, and without the benefit of the full information for which TSEP advocates. In other words, Exelon assumes that the potential risk is bounded by pipelines due to the amount of natural gas that would be in a pipeline. However, Exelon does not analyze the amount of gas that might be in an oil and gas well before the well explodes; and Exelon is deficient in making this analysis because it does not have complete information, having relied on the historical Texas Railroad Commission database for its information source.

For example, while the natural gas pipelines are (or will be moved) some distance from the powerblock and other important infrastructure, an unidentified and abandoned gas well will be much closer to the powerblock and related infrastructure. It cannot simply be assumed that the

safety consequences of a nearby gas well explosion of unknown magnitude and in close proximity are bounded by the analysis of the gas pipelines.

2. Poisonous Gases

The NRC Staff states that the applicant is not required to provide information regarding poisonous gases at the ESP stage. Again, TSEP reiterates that its expert rendered an opinion related to the threat of poisonous gases to illustrate the range of safety consequence that could follow from the inadequate data in the Application.

C. Reply to Exelon

Exelon argues that there is no prohibition against locating a nuclear power plant on a site with oil and gas wells, but Exelon misses the point. Exelon quotes the governing regulations, which specifically require the evaluation of such hazards to determine “whether a plant design can accommodate commonly occurring hazards, and whether the risk of other hazards is very low.”²⁸ Accordingly, the issue is not about a blanket prohibition, but about the sufficiency and accuracy of the applicant’s data—in order to ensure that the plant design accommodates hazards and that the hazards risks are indeed very low. It could well turn out that, due to the extensiveness of the oil and gas wells (unprecedented for a nuclear power plant, as TSEP pointed out in the Petition), the risk of hazards is much greater than “very low” and thus the location is unsuitable.

Exelon takes issue with certain “speculative” arguments that it believes TSEP has made, such as whether wells “may” be improperly plugged. However, the important point is that TSEP did not have access to the VCS site and necessarily, therefore, was required to make reasonable speculations. As with the growth fault issue, TSEP is prepared to conduct more specific evaluation at a later stage, once this Contention has been admitted. Consequently, it is not a fatal

²⁸ Exelon Answer at 24 (quoting 10 C.F.R. Part 50).

flaw to the basis of TSEP's contention that there is some reasonable speculation about the risks associated with the numerous active and abandoned oil and gas wells. Further development can occur during discovery.

There are two main disagreements with Exelon: first, there is a dispute concerning the adequacy of the data. Second, there is a disagreement concerning the level of hazard risk.

With regard to the first, and as stated, TSEP's expert identified significant data gaps regarding the oil and gas wells. The data gaps call into question the certainty of Exelon's data and related analysis. For its information, Exelon relied on an historical database from the Texas Railroad Commission and clearly this database was insufficient. TSEP's expert also uncovered many more active and abandoned oil and gas wells at the VCS site and in the immediate vicinity: TSEP's expert identified more than 300 wells at and near the site.

With regard to the second disagreement, Exelon argues that it has discussed the relevant hazards and that they are bounded by the pipeline hazards. TSEP reiterates the point it made above in reply to NRC Staff. By this argument, Exelon is assuming that the potential risk is bounded by pipelines due to the amount of natural gas that might be in a pipeline. Exelon does not analyze the amount of gas that might be in an oil and gas well before the well explodes, and with insufficient data, it is impossible to estimate how much gas this might be before the well may explode. Exelon is deficient in making this analysis and cannot make it because it does not have complete information. Also, the pipelines are much further away, whereas the oil and gas wells are located on the site and within the plant's footprint.

Exelon maintains that it has satisfied necessary requirements because it will ensure proper capping of all wells in accordance with the regulations. However, the dispute that TSEP is raising is with regard to the adequacy of the information—and whether Exelon has the right

information in order to complete proper plugging and abandonment is only part of the issue. The larger issue is whether Exelon has sufficient data to ensure “very low” hazards in the design of the plant; TSEP has urged that the data gaps mean that Exelon has not assured this. By conceding to the admission of this Contention in part, the NRC Staff agrees. Clearly, TSEP has demonstrated that there is a dispute about this and that there are safety implications; this Contention should be admitted in its entirety.

TSEP-SAFETY-4 – Failure to Assure Dependable Water Supply

A. A Statement of the Contention Itself

The ER fails to demonstrate the existence of a dependable water supply for a new reactor.

B. Reply to NRC Staff and Exelon

TSEP submitted this contention as a safety issue because Exelon addresses water availability in the SSAR.²⁹ For the reasons presented in TSEP-SAFETY-4, and the arguments in this Reply with respect to TSEP-ENV-2, 3, and 4, it should be clear that TSEP has submitted an admissible contention on water availability for the VCS plant. It is absurd that Exelon proposes to place a plant at a site where it has to even acknowledge that a plant shutdown due to lack of water is even a remote possibility.³⁰ Should the Licensing Board determine that water availability is not a safety contention, then it should therefore admit TSEP’s NEPA contentions on the same issue. TSEP-ENV-2, 3, 4, 15 and 16. Of particular importance is the water availability issue raised in TSEP’s alternative site contention, TSEP-ENV-16. If lack of water at VCS might cause it to be shut down, then this factor must be rigorously evaluated and compared to the Matagorda site which has access to unlimited quantities of cooling water from Matagorda Bay or the Gulf of Mexico.

²⁹ SSAR § 2.4.11.

³⁰ Exelon Answer at 31.

REPLIES TO ENVIRONMENTAL CONTENTIONS

TSEP-ENV-1 –Impacts From Enhanced Cooling Basin Seepage

A. A Statement of the Contention Itself

The ER fails to satisfy 10 C.F.R. § 51.45 because it understates and does not rigorously evaluate the environmental impacts of enhanced seepage of fluids and contaminants out of the cooling pond into oil and gas wells and borings beneath the VCS site. Exelon's ER does not identify how it will prevent or mitigate this impact by identifying and plugging the wells and borings.

B. Reply to NRC Staff and Exelon

TSEP maintains that it submitted an admissible contention. However, this contention also relates to the issue of the overall suitability of the site. As TSEP urges in related contentions, TSEP-SAFETY-3, there are safety consequences, and in TSEP-ENV-15, there are economic consequences too. Unless Exelon fully commits to, or the NRC requires the identification and plugging of all the oil and gas wells and boreholes on the site, safety and environmental risks increase. TSEP submitted its contention on the obviously superior site at Matagorda County, and included the comparison of oil and gas activities at both sites. If the Licensing Board finds that this contention is inadmissible, it should admit TSEP-ENV-16 in full where the issue will be litigated, albeit in a slightly different context.

TSEP-ENV-2 – 6, and 7 – 14; – Reply to Both NRC Staff and Exelon on Water Availability-related Contentions Generally

The following discussion is inclusive of the issues submitted by TSEP-ENV-2 – 6, and also, 7 – 14 (which both NRC Staff and Exelon largely agreed warranted admission). All of these are associated with water—either its availability or the impacts of its use. Each of these individual contentions is discussed separately, but are introduced here by a more general discussion of the NEPA process and water issues in this region of Texas. The NEPA process is

again discussed in a section preceding Contention TSEP-ENV-16 concerning the alternatives analysis.

The reason for considering environmental issues in this proceeding is that the National Environmental Policy Act (NEPA), 42 U.S.C. § 4321, *et seq.*, requires it. This legal requirement has been well established since *Calvert Cliffs* and its progeny. See *Calvert Cliffs' Coordinating Committee, Inc. v. U.S. Atomic Energy Commission*, 449 F.2d 1109 (D.C. Cir. 1971). The goal of NEPA is to insure that the decision-maker has honest, full disclosure of environmental information before making a decision. If there are issues regarding a site's acceptability from an environmental or socio-economic standpoint, it should be fully and honestly disclosed in the NEPA document.

TSEP strongly contends that water-related issues are a key aspect of the acceptability of this site and its designation under the Early Site Permit (ESP) process. TSEP has clearly stated that there are multiple water-related issues arising from the permitting of this site for a nuclear power facility. At this point, both Exelon and the NRC staff have accepted some of the water-related contentions, mostly related to impacts on whooping cranes and also the bay and estuarine system. TSEP contends at this reply stage that the argument is now how extensive should the examination of the water issue be, rather than whether or not genuine disputes of fact (or law) exist regarding water. They do.

Under NEPA, there are at least two separate ways that water-related issues must be examined. First, they must be examined relative to impacts of the proposed action and second, they must be evaluated in an evaluation of alternatives. 42 U.S.C. § 4332(C). The issue of water and the alternative site is discussed in Contention TSEP-ENV-16 that is presented separately because it includes more issues than just water.

In the following sections, the individual water contentions are discussed. It should be noted that many of these issues are interconnected. In its initial filing of contentions, TSEP may not have done as good a job as it should have in setting out both these interconnections and overlapping implications. Even so, TSEP is raising important issues to the future of Texas and the Texas coast as well as Exelon and the VCS site – issues that should be vetted and fully disclosed in any legally correct NEPA document.

There is precedent for admitting water-use contentions. In the case *South Texas Project Nuclear Operating Co.*,³¹ the ASLB admitted a contention challenging the Environmental Report for failing to provide adequate information regarding the effect of a new reactor on groundwater supplies to wells on adjacent properties. The Board found there was evidence to support the realistic possibility that the applicant would withdraw more groundwater than predicted and that this impact must be considered. This is analogous to the water-availability issues being raised by TSEP. TSEP strongly urges that Exelon’s surface water use will have impacts that demand the NRC’s formal consideration.

Contentions TSEP-ENV-2 – 6 all concern the many competing needs for water in the basin, such as: municipal demands from projected population growth; regional needs including currently existing and other future water supply projects; an invocation of the federal reserved water right; and/or competing needs due to less water from climate change. Contentions TSEP-ENV-7 – 14 relate to other competing needs for water in the basin, such as the endangered Whooping Crane, freshwater inflows to San Antonio Bay that support and maintain commercial fishing, recreation, and regional food supplies, and/or habitat at the Aransas National Wildlife Refuge.

³¹ *South Texas Project Nuclear Operating Co.* (South Texas Project, Units 3 and 4), LBP-09-25, 70 NRC 867, 892 (2009).

TSEP strongly contends that this is a dry, drought-prone region of Texas where water supply projects become a battlefield for hot debate and concerns over long-term sustainability for the region. This is the lens through which the water-availability Contentions must be viewed. They represent a genuine dispute with Exelon, and their consideration is absolutely mandated by the NEPA process. TSEP has supported the claims underlying the contentions with factual and legal and expert analysis. Consequently, TSEP strongly maintains that all of these Contentions warrant admission to the NRC proceeding.

TSEP-ENV-2 – Impacts of Limited Water Availability

A. Statement of the Contention itself

The ER fails to provide an adequate evaluation of the environmental impacts of severe limits on water availability in the region of the VCS site.

B. Reply to Exelon

Exelon responds to this contention by stating that it does not raise a genuine dispute of material fact and is not material to a finding that the NRC must make, therefore failing to satisfy 10 CFR §2.309(f)(1)(iv) or (vi). These will be discussed sequentially.

1. Materiality

Exelon argues that it is challenging this contention on the basis that it is not material to this proceeding, and Exelon briefs this argument in two paragraphs. According to Exelon, “[A] shutdown for lack of water for plant operation would not implicate any environmental concerns under NEPA – instead, a shutdown would constitute an economic issue.” Exelon then proceeds to cite the *Palo Verde* case as authority for this position.³²

Either by design or otherwise, Exelon misses the key point that an understanding of the availability of water is a key to understanding the suitability of this site and the impacts to be

³² Exelon Answer at 46 (citing *In re Arz. Pub. Serv. Co.*, LBP-82-117A, 16 NRC 1964, 1992-93 (1982)).

expected from permitting this site. TSEP assumes that there is some reason that Exelon included extensive sections in the ER addressing water availability. If water is not germane, then why is availability discussed at all? It makes no sense to site a facility at a location where inadequate water supply exists. Exelon knows this. The NRC knows this. There is simply no question it is germane – certainly to environmental impact analyses if not to safety considerations.

With regard to the *Palo Verde* decision, the Licensing Board determined that concerns related to water were “remote” and “speculative.”³³ This is the crucial distinguishing fact in that case from the instant situation. For example, TSEP-ENV-2 discusses the strain on water resources that the various proposed water supply projects from the 2011 Region L Water Plan will have on the Guadalupe River. And, for example, TSEP-ENV-8 discusses the recent drought of 2008-2009 and the related stresses on the water sources and water availability. In short, here, concerns about water are not “remote” in the least; examples from the recent past demonstrate that they are very present. Moreover, the NRC Staff characterize permissible NEPA concerns as those that are “reasonably foreseeable”³⁴ and TSEP has explained in detail how all of the water concerns at issue here are reasonably foreseeable.

2. Genuine Issue of Fact

There is also no question that a genuine factual dispute exists. TSEP may not have called out every section of the ER that addresses water availability in its statement of contentions but there can be no question: TSEP challenges the availability of water for the VCS facility. This challenge has several aspects. First, Exelon did not state exactly how it was going to obtain water for the facility. At one point Exelon claims that it may obtain 75,000 acre feet of water under an existing GBRA permit, and at another point Exelon claims that it may obtain its water from a

³³ *In re Arz. Pub. Serv. Co.*, LBP-82-117A, 16 NRC at 1992.

³⁴ NRC Staff Answer at 66.

new permit, perhaps secured by someone else. Exelon does not state which it is, and this underscores how difficult it is to obtain water in this region. So, that is at least one part of this contention—what is the proposed action and what are the consequences of that action. That is what NEPA requires—full and honest disclosure. What has been provided is nothing more than sleight of hand. So at least in part, this contention challenges this failure to identify a specific source of water and the failure to honestly disclose the impacts of that usage.

Second, TSEP absolutely challenges the reliance of Exelon on the Region L planning process. Region L does not arbitrate water disputes. Instead, the role of Region L is to identify and list potential water strategies to meet identified and projected needs. Tex. Water Code §16.053 (e)(5)(C).³⁵ Region L identified tens of thousands of acre feet in excess of its projected needs because the regional water planning process is an *enablement* process rather than a permitting or allocation process. It simply identifies candidate projects. Simply put, if a project is not on the list, it cannot proceed to further environmental vetting under Texas law. Tex. Water Code §11.134 (b)(3)(E).³⁶ Additionally, a project may not receive funding from the Texas Water Development Board unless it is included on the list. Tex. Water Code §16.053(j)(2)(B).³⁷ There is no certification or section of the Regional Water Plan that certifies availability. That is for the Texas Commission on Environmental Quality (the TCEQ). Those adjudications have not

³⁵ Texas Water Code §16.053 (e)(5)(C) states: “Each regional water planning group shall submit to the development board a regional water plan that... includes but is not limited to consideration of the following: ... all potentially feasible water management strategies, including but not limited to improved conservation, reuse, and management of existing water supplies, conjunctive use, acquisition of available existing water supplies, and development of new water supplies.” *See also* 31 T.A.C. § 357.5 (e)(4).

³⁶ This provision states: “The commission shall grant the application only if...the proposed application ...addresses a water supply need in a manner that is consistent with the state water plan and the relevant approved regional water plan for any area in which the proposed appropriation is located, unless the commission determines that conditions warrant waiver of this requirement.”

³⁷ This provision states: “The board may provide financial assistance...for water supply projects only if...the board determines that the needs to be addressed by the project will be addressed in a manner that is consistent with that regional water plan... But inclusion in the list of regional projects means nothing in terms of water availability.”

occurred for future projects on the Region L Plan such as the GBRA Simsboro Project and GBRA New Appropriation (Lower Basin).

The only water that is “available” at this time is the GBRA/UCC water, and its usage has severe implications to other water needs as discussed in Contentions TSEP-ENV 3 and 4. Relative to this issue, TSEP agrees that there is no material issue of fact with regard to whether or not this valid Texas water right exists. It does. However, there is no guarantee under Texas water law that there is sufficient water in the river to provide this water at 100% of the volume, 100% of the time.

To the extent that Exelon is willing to stipulate that the source of water for the VCS facility will be this existing GBRA UCC/Dow Chemical water right, then the focus of this dispute should turn to Contentions TSEP-ENV 3 and 4. However, if Exelon is unwilling to so stipulate and instead insists on keeping alive the potential use of other yet to be permitted water diversion projects, the Regional Water Plan cannot be relied upon as support because it does not determine if water is available, only that a particular project has been identified to meet a particular need. The Regional Water Plan is simply an enablement process. Exelon’s reliance that its “withdrawals are accounted for in the state-mandated regional water plan”³⁸ is ill-founded and cannot form a reason for the NRC to deny admission of this Contention.

It is worth noting that the NRC clearly has the authority to address impacts that are regulated from other agencies, such as these state water availability issues here. For example, in the Levy County Nuclear Power Plant case, the Board clearly stated, “we reject the proposition that the ER and EIS can properly exclude any environmental impact that is regulated by another federal or state entity or that, because NRC has no jurisdiction to *regulate* an environmental

³⁸ Exelon Answer at 46.

impact, it can be excluded, *per se*, from the ER or EIS.”³⁹ The Board explained that NRC regulations and case law provided authority for this position.

Finally, TSEP responds to Exelon’s position that the Trungale Report is not materially different from information presented in the ER.⁴⁰ The Trungale report highlights the differences in historical water use that was reported by GBRA to the South Texas Water Master, and the data presented in the ER. TSEP maintains that the Exelon application does not fairly or accurately represent historical water use pursuant to GBRA’s water permit, No. 5178. These differences may be small, but deserve investigation in this proceeding.

C. Reply to NRC Staff

The NRC staff takes a position similar to Exelon in that they claim that there is no material dispute and that the issue of water availability is not material to this ESP proceeding. They also raise the claim that TSEP does not provide a concise statement of the alleged facts or expert opinions which support the Petitioners position.

Again, TSEP would start by stating that this contention challenges that there is sufficient water for the VCS facility as described in the ER. Again, TSEP would state that if Exelon were willing to stipulate that they were using water under the existing water rights of the GBRA UCC/Dow permit, then the focus of the dispute should change from this contention to Contentions TSEP-ENV 3 and 4.

As to the expert opinions that support TSEP’s position, TSEP would respond that this is a legal issue as much as a factual one. Essentially, Exelon and the NRC staff are offering the Region L Plan developed under Texas law as proof (or as evidence) of water availability. However, as stated, this reliance is ill-founded and exposes their lack of knowledge about Texas

³⁹ *In re Progress Energy Florida, Inc.*, (Levy County Nuclear Power Plant, Units 1 and 2), Docket Nos. 52-029-COL, 52-030-COL, 69 N.R.C. 736 (July 08, 2009).

⁴⁰ Exelon Answer at 41-43.

water law. The Region L Plan does not determine if water is available. It is a plan that seeks to identify potential ways to meet needs. Nothing more. It allows projects to move forward towards possible permitting where water availability is in fact determined. Nothing in the Region L Plan makes any representation about water being available. As stated, regional water planning simply identifies potentially feasible projects that are desired by different parties.

There is no section of the Region L Plan that states that water is available for future projects. TSEP would reference a specific section except one cannot reference a nullity or a section that does not exist. Although two specific permit applications are identified that are proposed by GBRA, they are only now beginning to work their way through the permitting process. They have not been approved and may not be approved. So, to the extent that Exelon insists that these unpermitted projects somehow provide water for their future, TSEP challenges the legal basis for that statement.

NRC Staff discusses a statement in the ER which describes “a surplus of more than 115,000 acre-feet per year is projected in 2060 under the GBRA/UCC water rights.”⁴¹ Exelon referenced the same provision. In reply, TSEP explains that this is the smoke and mirrors of the Region L Plan. It is only “paper” water without any legal or factual basis at the current time. The only unused water right in existence today is 106,000 acre feet of which Exelon proposes to take 75,000. By way of additional explanation, the Region L Plan essentially claims that as more water is used, there will be more withdrawals from groundwater sources to make up water needs (or water deficits) and that these in turn will be discharged to the rivers (surface waters) and become additional water flow.⁴² In short, as the population consumes more water, the Region L Plan claims to create more water. In practice, this cannot work for a variety of reasons, including

⁴¹ NRC Staff Answer at 36.

⁴² For example, the Plan discusses increased growth of effluent due to water demands for Bexar County. 2011 Region L Water Plan § 7.1.2 (March IPP 2010).

the hydrological interconnection between groundwater and surface water, and the fact that return flows from water use are not guaranteed because they themselves can be consumed in reuse projects; moreover, the proposed groundwater projects may never come into existence.

By way of yet further explanation, the Region L Plan proposes projects totaling 800,000 acre feet of supply to meet a projected shortfall of 400,000 acre feet.⁴³ By this reasoning, there should be 400,000 acre feet of excess—a conclusion which is, of course, nonsensical. TSEP again explains that this is the smoke and mirrors of the Region L Plan.

Simply stated, under Texas law, there is no water available at this time except the water that is already permitted. We believe that this is a genuine dispute, albeit perhaps more legal rather than purely factual.

TSEP-ENV-3 – Impacts on Regional Water Availability

A. Statement of the Contention itself

The ER fails to satisfy 10 C.F.R. §§ 51.50 & 51.45 because it does not evaluate the impacts on regional water availability. In order to provide water for Exelon, other water supply projects must be developed or changed in the region to satisfy other demands.

B. Reply to Exelon

Exelon's position here is that there is no material issue of fact raised by this contention. TSEP strongly disagrees and thinks that it was quite clear as to the basis for the dispute.

In Texas, as discussed in the previous section, regional water planning identifies both needs and proposed projects to meet those needs. As described by Con Mims, the Chair of Region L at the Texas Water Law Conference in December of last year, "it is not the role of regional planning to resolve disputes over water". And in Region L, there is a projected future

⁴³ See 2011 Region L Water Plan § 4A.1 (March IPP 2010) (stating that Region L has a projected annual water need of 177,915 acre feet in 2010, increasing to 438,654 acre feet by 2060); see also 2011 Region L Water Plan § 4B.1.1 (stating that water management strategies recommended to meet projected needs in the South Central Texas Region could produce new supplies in excess of 755,000 acre feet per year in 2060).

need for 400,000 acre feet of water (not including any water for the bays and estuaries).⁴⁴ At this point in time, the only appropriated water right that is available in the Guadalupe River system (e.g., not permanently obligated) is the GBRA UCC/Dow permit that Exelon seeks to utilize (at least under one concept of water availability). If Exelon claims the majority of that unused water right, that action will remove the last bulk volume of uncommitted water rights from the basin. In short, if Exelon gets that water, then someone else gets nothing.

Stated another way, this is a basin where demand for water clearly outstrips current permitted supply. This is clear from the fact that the projected needs amount to approximately 400,000 acre feet and yet the currently available permitted water (*i.e.* the unused water right) is only 106,000 acre feet. There are significant environmental consequences of Exelon taking this water. Other important projects may be set aside. Additional projects may be developed to the harm of the river and the bay. Groundwater resources may be negatively impacted.

Exelon misunderstands TSEP's position when it discusses that "other projects are not caused by the VCS project."⁴⁵ This is TSEP's position, for clarification: When a large amount of senior water is committed to a single project (here a power plant) in the lower basin, then as a consequence, other water development projects must be developed in order to attempt to satisfy the demand in the rest of the river basin. The development of other water development projects does not mean that additional water is available; it is simply part of the Regional L Process to try to identify various needs. There is no evaluation within the Region L Process of the wisdom of each of the projects. In effect, the VCS project is trying to get pushed to the front of the line—leaving other projects, such as the GBRA's new water right for 189,000 or the Simsboro Project

⁴⁴ See 2011 Region L Water Plan § 4A.1 (March IPP 2010) (stating that Region L has a projected annual water need of 177,915 acre feet in 2010, increasing to 438,654 acre feet by 2060).

⁴⁵ Exelon Answer at 49.

(i.e., the projects that Exelon references on page 47 of its Answer) to try to find other ways to get the water from the same limited source.

Ultimately, the issue here is a legal one of whether there has been full disclosure as required by NEPA about the environmental consequences of the action of Exelon in attempting to locate a highly water consumptive land use in a basin that is severely challenged to meet its projected needs. In making this determination under NEPA, the NRC should fully understand the implications of selecting this site. This is the reason for this Contention. TSEP strongly urges that the NRC must honestly and accurately consider regional water availability when evaluating this site. Among other things, the NRC should consider whether in fact a land use such as a merchant nuclear power plant, which could locate anywhere within the state under Texas law, should be allowed to locate in a water-short portion of the state where either the environment or other proposed land uses or both would be harmed by such decision. NEPA requires nothing less.

C. Reply to NRC Staff

The NRC Staff takes the position that no genuine factual dispute exists and that there is no concise statement of the alleged facts or expert opinions which support petitioners position on this issue. The NRC Staff repeats many of the same arguments (for example, the NRC Staff references the Region L planning process and quotes several of the same portions from the ER discussing the 115,000 acre feet allegedly available in 2060) that it advanced in answer to TSEP-ENV-2.

TSEP disagrees with the NRC Staff Answer. Contrary to the NRC Staff claim, TSEP's position is in direct conflict with the ER. Stated concisely, there is not sufficient water in the Guadalupe River Basin such that a major water user as the proposed Exelon VCS could be located without major environmental and land use and development consequences resulting

therefrom. This is plainly supported by the Region L Plan that identifies a need for an additional 400,000 acre feet of water beyond current availability with no permits having been issued to provide such water. This is the type of dispute that has led to statement that “in Texas, whiskey’s for drinking and water’s for fighting”. TSEP respectfully suggests that this is a genuine conflict based on the documents (such as the Region L Plan) relied upon by Exelon.

TSEP-ENV-4 – Impacts on Long-term Water Availability

A. Statement of the Contention itself

The ER fails to satisfy 10 C.F.R. §§ 51.50 & 51.45 because it does not evaluate the impacts on long-term water availability. In order to provide water for Exelon, other water supply projects must be developed or changed to satisfy other demands. Because the ESP has a life span of twenty to forty years, water availability over that long-term period must be fully evaluated. The ER does not describe or evaluate the long-term impacts on water availability.

B. Reply to Exelon and NRC Staff

Both Exelon and NRC Staff seem to misunderstand the concern set forth by TSEP. TSEP is challenging the analysis of water availability and water impacts of the use of water by Exelon depending upon whether Exelon either (a) uses the GBRA UCC/Dow water right or (b) contracts from another project that will generate new water rights. That challenge is lodged in the context of the Region L Plan, which includes multiple proposed projects to address a cumulative shortfall of 400,000 acre feet. It identifies project after project that could be built, but it never identifies at any point the environmental consequences that would ensue from developing an additional 400,000 acre feet of water in the Guadalupe River Basin. Thus, it is incumbent upon the NRC as the federal agency undertaking a “major action” to analyze these environmental consequences from the water use identified by Exelon here.

To quote a document that states that consequences are expected to be “SMALL” (*see* NRC staff response at 46) without any quantification is to fail in basic NEPA disclosure. The

bottom line is that there are a number of perturbations that ensue from Exelon stepping in and claiming 75,000 acre feet of water that is currently permitted – leaving only approximately 30,000 acre feet of unclaimed permitted water in the basin, a basin that struggles to meet its current water obligations. As discussed in the bay and estuarine section, there is currently no water set aside for San Antonio Bay—water that is necessary to support wildlife and fishing populations, food sources and recreation, and the local economy. Any water claimed by Exelon will be to the detriment of San Antonio Bay and flows in the Guadalupe River. This is a fact. It needs to be fully and fairly disclosed and discussed as part of the water availability analysis.

At this point, TSEP would also interject that Contention TSEP ENV 6 directly applies to this contention about long-term supply. Climate change, over the next 40 to 60 years, will be a factor. It will reduce water availability by worsening drought conditions as set out in the declaration of Dr. Ron Sass. As such, climate change certainly generates a long-term availability issue. If the Licensing Board prefers, TSEP would have no objection to combining TSEP Contentions ENV 4 and 6 into a single contention.

TSEP-ENV-5 – Potential Federal Reserved Water Right for the Aransas National Wildlife Refuge

A. A Statement of the Contention Itself

The ER fails to document the potential federal reserved water right mandating freshwater inflow requirements for the Aransas National Wildlife Refuge. The federal government may invoke this right to protect the endangered Whooping Crane, which would preclude further use of the waters of the Guadalupe River.

B. Reply to NRC Staff and Exelon

TSEP concedes that no entity in the federal government has yet asserted that a federal reserved water right is claimed for the Aransas National Wildlife Refuge. This contention is submitted to identify that a federal demand for water might be claimed in the future, and that a plausible scenario and legal basis exists to justify the claim. This contention, in light of TSEP's

other contentions regarding water availability, TSEP-ENV-2–4, and downstream aquatic impacts on federal lands and a federally protected species, TSEP-ENV-7–14, highlights the multiple competing demands for the limited and declining resource. This issue was also not considered by Exelon in their alternative site analysis, especially with respect to the comparisons to Matagorda and the unlimited supply of cooling water there.

TSEP-ENV-6 – Impacts on Water Availability and Aquatic Resources in Light of Reasonably Foreseeable Climate Changes

A. A Statement of the Contention Itself

The ER fails to describe or analyze the future changes in water availability in light of the reasonably foreseeable impacts of a changing climate in the Guadalupe and San Antonio River basin.

B. Reply to NRC Staff

The NRC Staff oppose the admission of this contention. The NRC Staff alleges that there is no disputed issue with the application because TSEP has not shown how the ER inadequately addresses future water availability in light of reasonably foreseeable impacts of climate change. Second, Staff alleges that the contention lacks a concise statement of the expert opinions that support the contention. For the reasons discussed below, these allegations entirely lack merit.

First, there is plainly a disputed issue with the application. As an initial matter, Exelon discusses climate change in the SSAR (not in the ER, as NRC Staff believes). Moreover, TSEP has done exactly what the NRC Staff claims it has not: with TSEP’s own analysis, TSEP has arrived at the opposite conclusion from Exelon by directly addressing future water availability in light of reasonably foreseeable impacts of climate change. TSEP’s expert analysis demonstrated that climate change will result in (1) temperature increases, (2) net decreases in annual

precipitation along the Guadalupe River basin, and (3) ultimately, less water availability along the river, including a culmination by 2100 of a freshwater deficit of 270,000 acre feet/year.⁴⁶

By contrast, Exelon sheepishly or conveniently calls future predictions of climate change “speculative” and concludes that the “long-term average annual total rainfall at the VCS site could reasonably be expected to be within [a normal range of variability].”⁴⁷ Plainly, TSEP reached different conclusions. These are real differences and disputed facts. And, contrary to both the NRC Staff’s and Exelon’s assertions, the fact that TSEP did not discuss Exelon’s erroneous conclusions in tedious detail does not mean that these are not disputed issues.

In its Answer, the NRC Staff continues to repeat the nonsensical allegation that TSEP has not disputed Exelon’s application. For example, the NRC Staff states that “Petitioners assert deficiencies in the Application but do not mention, much less dispute the findings in the ER Section 5.11 or in any other section.”⁴⁸ Or: “Nor do they specifically challenge the ER’s findings regarding salinity and impacts on the Whooping Crane.”⁴⁹ Unless the NRC Staff has not read TSEP’s petition, it is difficult to understand the basis of these allegations. Quite simply, with regard to ER 5.11, TSEP has disputed all of Exelon’s claims that impacts to freshwater flows in the bay would be “SMALL” as a result of VCS operation. Water availability issues were, in fact, the substance of contentions TSEP-ENV-2, 3, and 4. And, this contention specifically alleges that climate change will further impact water availability, as well as salinity in the bays. Moreover, climate change was not mentioned in Section 5.11 or any of the block paragraphs that

⁴⁶ Ex. F-1, Sass Report, at 35.

⁴⁷ Exelon Answer at 59-60.

⁴⁸ NRC Staff Answer at 55. Another example is: “Despite these assertions, Petitioners do not specifically challenge the Application’s treatment of future water availability that is discussed in the ER.” NRC Staff Answer at 54. As discussed in the body, this allegation too is nonsensical.

⁴⁹ NRC Staff Answer at 54.

NRC Staff quotes in its Answer; thus, the NRC Staff allegations about that portion of Exelon’s application are actually off point.

With respect to the second statement quoted above, NRC Staff agreed to admit all of TSEP’s contentions on the Whooping Crane; clearly, those issues were challenged. In short, there can be no question that disputed issues exist between Exelon and TSEP regarding the impacts of climate change, and that TSEP has been explicit in the nature of the disputes.

Second, the NRC Staff claims that TSEP has failed to connect its conclusions regarding the impacts of climate change to Exelon’s application.⁵⁰ To the extent Exelon discusses climate change, it comprises one page of the SSAR;⁵¹ it is omitted from the ER. And, the application contains no discussion of the environmental implications of water shortages due to climate change in either the SSAR or the ER.⁵² As a result, TSEP’s statement that this contention is one of omissions is accurate.

Even so, TSEP’s statements are easily connected to the application. TSEP focused on the environmental importance of future water unavailability – and Exelon focuses on a “design basis standpoint” including “expected return periods of 100 years or more.”⁵³ In February 2010, the Council on Environmental Quality (“CEQ”) issued a Memorandum discussing how climate change is to be analyzed in the NEPA context; the document is entitled *Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions*.⁵⁴ Among other important provisions, the document states that “climate change effects should be considered in

⁵⁰ NRC Staff Answer at 56.

⁵¹ The fact that water availability is here discussed by Exelon as a safety issue undermines Exelon’s arguments elsewhere in its Answer—specifically with regard to TSEP-SAFETY-4 that water availability cannot be a safety issue.

⁵² The application contains one sentence without any further discussion of possible implications: “Forecasts of climate for the site region would potentially impact environmental conditions.” SSAR at 2.3-23.

⁵³ SSAR at 2.3-23.

⁵⁴ Nancy H. Sutley, *Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions* (February 18, 2010), available at http://ceq.hss.doe.gov/nepa/regs/Consideration_of_Effects_of_GHG_Draft_NEPA_Guidance_FINAL_02182010.pdf

the analysis of projects that are designed for long-term utility and located in areas that are considered vulnerable to specific effects of climate change.”⁵⁵ The scope of the analysis should consider the “reasonably foreseeable future.”⁵⁶

There are a few important points here. A nuclear power plant is designed for long-term utility—the operating horizon is decades long with the possibility of permit renewal. This is exactly the type of operation contemplated by the CEQ guidance. Also, the VCS site is in an area that is especially vulnerable to the effects of climate change—the area is dry and drought-prone. This was explained in detail in multiple contentions in TSEP’s Petition. In sum, the CEQ guidance how climate change is to be analyzed; Exelon failed to consider climate change in accordance with the guidance. This is precisely the allegation made in TSEP’s contention. Therefore, the admission of TSEP’s contention is warranted.

C. Reply to Exelon

Like the NRC Staff, Exelon also makes disingenuous arguments that there is no dispute between TSEP and Exelon on this issue. But, it is difficult to imagine how TSEP could have state its conclusion more clearly—finding material impacts on water availability due to climate change modeling—is the opposite of Exelon’s. TSEP demonstrated above in the “Reply to NRC Staff” section how there are disputed issues and believes that suffices as a response to Exelon as well. And, TSEP again notes that it views this contention as challenging Exelon’s omission of a relevant discussion, as Exelon’s conclusion is only that impacts are “speculative.”

In support of its position, Exelon references NRC decisions that, according to Exelon, allegedly stand for the proposition that NRC boards have rejected climate change contentions.⁵⁷ However, those cases are all factually distinguishable: importantly, in those cases, the Petitioner

⁵⁵ *Id.* at 7.

⁵⁶ *Id.* at 7.

⁵⁷ Exelon Answer at 60.

had not supported its contention with an expert report, as TSEP has done here. Licensing Board decisions rejecting unsupported climate change allegations have no bearing on whether a legitimate, supported climate change contention is admissible. In *William States Lee*, the only support of increasing water temperatures was the personal observation of one individual at an NRC public meeting. *Duke Energy Carolinas, LLC*, LBP-08-17, 68 NRC 431, 446 (2008). Such lay opinion provided “no meaningful support” for the petitioner’s allegation. *Id.* In *Comanche*, the purported supporting expert report was not on point to support the petitioners’ climate change allegations. *Luminant Generation Co.*, LBP-09-17, 70 NRC 311, 362 (2009). Finally, in the *South Texas* case, there was no factual or expert support for the petitioners’ allegations that the applicant failed to consider climate change. By contrast, TSEP has submitted a credible expert report that shows climate change will have significant impacts on water availability that should have been considered by Exelon.

TSEP’s contention is a claim of omission – Exelon entirely failed to address the potential impacts of climate change in its analysis. Exelon’s assertion that the issue should have pointed to specific sections of its Application is incorrect. First, Exelon purports to have addressed climate change in the SSAR.⁵⁸ However, this minimal analysis in the safety section is inadequate and NEPA necessitates considering climate change in the ER. Exelon also asserts that climate change should have been raised with respect to the water availability section of the Application. This argument must also fail. Petitioner submitted other significant contentions with regard to water availability. This is a separate contention arguing the Exelon Application wholly overlooks the impacts of climate change and therefore fails to meet the NEPA requirements.

Consequently, TSEP has raised a disputed issue, supported it with the analysis of an expert’s report, and the contention therefore meets the NRC requirements and warrants

⁵⁸ Exelon Answer at 59–60 (*citing* SSAR 2.3-21 – 24)

admission. Exelon tries to argue that the only support is the declaration of Dr. Ron Sass, but plainly TSEP also provided a lengthier report by Dr. Sass at Exhibit F-1.

Exelon focuses only on the short-term horizon of the project to attack Dr. Sass's report, and these arguments must fail. First, Exelon's discussion of the duration of the ESP/COL is understated. Exelon alleges that, under current timing, the COL could expire prior to 2060, before the period of evaluation by Dr. Sass. In reply, TSEP would point out that first, an ESP can be for 10-20 years (10 C.F.R. § 52.26); plus, there are unlimited renewals of 10-20 years (10 C.F.R. § 52.33). Under this timing, the plant could reasonably be in operation at the year 2100. Second, climate change is gradual. Sheer logic dictates that the severe climate change impacts that Dr. Sass discusses may not begin until around the year 2100; but, the impacts accrue gradually and thus will be felt before 2100. But should logic not be enough, Dr. Sass has offered a follow up declaration to clarify what should have been an obvious point in his analysis.⁵⁹ Thus, problems with water availability will readily begin during the early life of the VCS nuclear power plant and worsen as the plant ages and particularly so, if the plant is renewed. Dr. Sass's report is directly on point and provides reasoned expert support for the admission of this contention.

Finally, Exelon argues that TSEP's claim is outside the scope of the proceeding. For reasons essentially already discussed, this allegation lacks merit. First, climate change impacts will be felt within the operating period of the VCS plant; Dr. Sass's declaration confirms this.⁶⁰ Second, the CEQ guidance clearly focuses on projects with "long term utility" and the "reasonably foreseeable future." A nuclear power plant is one of long-term utility, and TSEP's

⁵⁹ Attachment 1, Declaration of Dr. Ronald L. Sass.

⁶⁰ Attachment 1, Declaration of Dr. Ronald L. Sass.

analysis of a time period around 2100 (which is less than 100 years from today) is within the reasonably foreseeable future.

TSEP-ENV-7 – Catastrophic Impacts to the Endangered Whooping Crane

A. A Statement of the Contention Itself

The Exelon ER is inadequate because it fails to rigorously explore and objectively evaluate the potential for catastrophic impacts of VCS water use on the endangered Whooping Crane—impacts that threaten the survival of the species.

B. Reply to NRC Staff

The Staff does not oppose the admission of this contention.⁶¹

C. Reply to Exelon

Exelon concedes that issues raised in this contention are relevant to determine whether VCS water withdrawals will impact Whooping Cranes.⁶² However, despite this, Exelon then objects to the contention as a whole because, according to Exelon, TSEP fails to show there is a genuine dispute. TSEP specifically addressed the “genuine dispute” requirement of 10 C.F.R. § 2.309(f)(1)(vi) for this contention.⁶³ Exelon’s ER concludes that the impacts of water use during VCS operation on the endangered Whooping Crane will be “small.” TSEP disputed this conclusion.⁶⁴ TSEP’s Petition contained a full 37 pages on contentions related to aquatic impacts of VCS water use on the ecosystems of the San Antonio Bay and on the Whooping Cranes.⁶⁵ TSEP incorporated by reference all its supporting facts, opinions and arguments showing numerous genuine disputes from TSEP-ENV-8 through 14 into this Contention, TSEP-ENV-7.⁶⁶ Exelon’s Answer does not discuss or acknowledge that these numerous, genuine disputes from these other contentions are incorporated into TSEP-ENV-7.

⁶¹ NRC Staff Answer at 57.

⁶² Exelon Answer at 64; 69.

⁶³ Petition at 61.

⁶⁴ Petition at 61.

⁶⁵ Petition at 55–92.

⁶⁶ Petition at 61.

It is inconceivable and nonsensical that, while Exelon finds no genuine disputes set forth in any of TSEP's 37 pages, Exelon simultaneously concedes that a consolidated aquatic impacts and Whooping Crane Contention is in fact admissible.⁶⁷ Exelon wrote: "it appears that there is a genuine dispute of material fact between TSEP and Exelon concerning the potential impacts to whooping cranes [in ANWR] from VCS water withdrawals from the Guadalupe River."⁶⁸ Yet, despite this concession, Exelon then objects in whole or in part to all of TSEP's contentions (TSEP-ENV-7 through 14) *on these exact issues*.

Exelon further concedes that it has submitted seriously flawed modeling in its Bio-Statistical Study.⁶⁹ TSEP understands that it is difficult and unusual for an applicant for an NRC license to concede on the admissibility of contentions. However, Exelon's Answer is simply inconsistent and self-contradictory. As stated below, TSEP does not agree to the language of the proposed consolidated contention and urges that each of its submitted Contentions be considered by the Licensing Board individually.

Exelon makes specific arguments with respect to whether TSEP-ENV-7 identifies a genuine dispute. Exelon argues that this contention fails to tie VCS water use to changes in bay salinity and resources for the Whooping Cranes.⁷⁰ In doing so, Exelon willfully ignores the other related contentions that are expressly incorporated into this one, and which extensively discuss the link between VCS water use, increased salinity, and Whooping Cranes. So here, the dispute is plainly whether the impacts on Cranes are "small" or "potentially catastrophic." TSEP's incorporated Contentions identify precisely how the impacts of VCS water use could be "potentially catastrophic" and describe the mechanisms that operate to link VCS water use to

⁶⁷ Exelon Answer at 63; 69.

⁶⁸ Exelon Answer at 62.

⁶⁹ Exelon Answer at 79; 82.

⁷⁰ Exelon Answer at 65–66.

reduced inflows, increased salinity, and impacts on the bay ecosystems and Whooping Crane resources.

For example, TSEP-ENV-9 disputes the conclusions of the SAGES report upon which Exelon relies to determine that impacts are “small.”⁷¹ TSEP-ENV-10 contends that the ER improperly omits any analysis of the impacts of VCS water withdrawals on reduced sediment and nutrient flows into the bay.⁷² TSEP-ENV-11 contends that the ER omits an analysis of VCS water use on bay salinity and bay ecosystems, as well as identifies flaws in the Exelon Bio-Statistical Study and identifies an inadequate drought study.⁷³ TSEP-ENV-12 contends that the ER omits an analysis of VCS water use on salinity and ecosystems in designated critical habitat, as well as identifying flaws in the Exelon Bio-Statistical Study and an inadequate drought study.⁷⁴ TSEP-ENV-13 contends that Exelon is required by regulation to include monitoring procedures for designated critical habitat in the ER while Exelon contends it is not really required.⁷⁵ Finally, TSEP-ENV-14 contends that the Application is too misleading and too deficient to enable the NRC to comply with the Endangered Species Act with respect to the Section 7 consultation on Whooping Cranes.⁷⁶ TSEP thoroughly investigated these issues and has identified these many disagreements with the Application. In short, these genuine disputes range from specific disagreements on what needs to be in the Application, to questions about the scientific truthfulness of specific statements by Exelon, and finally to the issue of whether VCS can operate without causing prohibited harm, death and jeopardy to the Whooping Cranes.

⁷¹ Petition at 72–73.

⁷² Petition at 75.

⁷³ Petition at 79–80.

⁷⁴ Petition at 82–84.

⁷⁵ Petition at 86–87.

⁷⁶ Petition at 90–92.

Exelon presents an absurd and meaningless argument that VCS water withdrawals would be less than the annual variation in river flows.⁷⁷ This is irrelevant. TSEP's Contentions (again as incorporated by reference) make clear that the critical factor is continued water withdrawals during times of drought and low flows.⁷⁸ Exelon provides absolutely no support that this argument is either scientifically valid or material to this proceeding. It is akin to saying that when a person gets a fever, his/her body temperature rise is insignificant in relation to the coldest winter day and the hottest summer day. It does not mean that a body temperature of 102°F is not a serious health risk. Use by VCS of 75,000 acre feet/year of water when the annual flow is very high—for example, several million acre feet—may not have a significant impact. However, 75,000 acre feet consumed during a dry year, when annual flows may drop to just a few thousand acre feet per month for extended periods,⁷⁹ will certainly have a significant impact and pose a significant threat to the Whooping Cranes.

Exelon argues that the issues in this Contention are addressed in the June 24, 2010 Update.⁸⁰ However, Exelon ignores that TSEP disputes much of the information in that same Update,⁸¹ and Exelon itself concedes that the Bio-Statistical Study is fundamentally flawed.⁸²

Exelon next argues that because the ER includes a detailed description of Whooping Cranes and impacts upon them, this Contention does not raise any dispute.⁸³ Exelon also urges that because it identifies “differing professional and scientific opinions” in the ER it is has insulated itself from this Contention.⁸⁴ These arguments too fail. As TSEP's Contentions make

⁷⁷ Exelon Answer at 66; fn.302.

⁷⁸ See TSEP-ENV-10; 11 and 12 (all discussing the impacts of VCS water use on the bay and the Whooping Cranes).

⁷⁹ ER at 2.3-159, Table 2.3.2-15

⁸⁰ Exelon Answer at 67.

⁸¹ TSEP-ENV-8; 9; 11 and 12.

⁸² Exelon Answer at 82–83.

⁸³ Exelon Answer at 67–68.

⁸⁴ Exelon Answer at 68–69.

clear, TSEP disputes that the impacts on Whooping Cranes are “small” as urged by Exelon. Exelon reached this conclusion by relying on disputed information such as the SAGES Study (which TSEP disputes)⁸⁵ and an overestimate of mortality in 2008-2009 (again disputed by TSEP).⁸⁶ Exelon argues that NEPA does not require the “best scientific methodology;”⁸⁷ however, the Endangered Species Act (“ESA”) does. 16 U.S.C. § 1536(a)(2). ESA Section 7(a)(2) requires that the NRC and U.S. Fish & Wildlife Service (“FWS”) must use the “best scientific and commercial data available.” 16 U.S.C. § 1536(a)(2). Here, in response to TSEP’s submission, Exelon now admits that its Bio-Statistical Study is fundamentally flawed.⁸⁸ TSEP’s submission highlights multiple flaws in the SAGES Study, upon which Exelon heavily relies.⁸⁹

These are real disputes, which TSEP has backed up with experts’ analyses. Merely identifying the differing views, as Exelon has in its Answer, is not sufficient to defeat a contention. Exelon seems to believe that, simply because it has discussed its own view, it has done all it needs to do—even though other experts have reached opposite conclusions. This Contention challenges Exelon’s conclusion, as well as the information Exelon relied upon when it reached that conclusion.

Exelon makes a peculiar statement that NEPA does not require the NRC to determine which expert opinion is correct but only requires full disclosure. While Exelon seems to use this statement to suggest TSEP’s expert opinion does not matter, in fact what it suggests is that Exelon concedes that TSEP’s expert opinions are required to be admitted by NEPA. Moreover, even though NEPA may be a procedural statute, it was enacted under the assumption that better

⁸⁵ TSEP-ENV-9.

⁸⁶ TSEP-ENV-8.

⁸⁷ Exelon Answer at 72, fn.325.

⁸⁸ Exelon Answer at 82-83.

⁸⁹ Petition at 65–73 (TSEP-ENV-9).

information will make for better decisions—such that the federal decision-maker (here the NRC) may intelligently weigh competing expert opinions.

Remarkably, Exelon argues that this contention merely covers “general issues” related to Whooping Cranes and is therefore not material to any NRC findings.⁹⁰ While Dr. Sass’s report may include discussions of general issues, TSEP’s Contention ENV-7 (and the other Contentions that are incorporated) addresses very specific issues of Whooping Crane biology, estuary ecosystem health, and the relationship of both to freshwater inflows. Despite Exelon’s protestations to the contrary, TSEP has clearly tied issues related to the Whooping Crane to VCS water use. Both NRC Staff and Exelon have conceded that there is a genuine dispute here, and TSEP’s Contention should therefore be admitted.

TSEP-ENV-8 – Whooping Crane Mortality in 2008-2009

A. A Statement of the Contention Itself

Exelon’s ER fails to rigorously explore and objectively evaluate the unprecedented 2008-2009 mortality event of Whooping Cranes at the Aransas National Wildlife Refuge. In the ER, Exelon attempts to undermine the official reports of a federal agency and urges the NRC to rely instead on biologically unsound rationales.

B. Reply to NRC Staff

The Staff does not oppose the admission of this contention.⁹¹

C. Reply to Exelon

Exelon concedes that issues raised in this Contention are relevant to determine whether VCS water withdrawals will impact Whooping Cranes.⁹² However, Exelon then argues that the

⁹⁰ “General issues related to the salinity of water in the Aransas National Wildlife Refuge, to the abundance of wolfberries and blue crabs, and to their impacts on whooping cranes in general are not material to the findings that the NRC is required to make in this proceeding.” Exelon Answer at 66.

⁹¹ NRC Staff Answer at 57.

⁹² Exelon Answer at 64.

cause of the deaths is not material.⁹³ If the unprecedented Whooping Crane mortality event of 2008-2009—when 8.5% of the flock died at ANWR—is truly immaterial, it is strange that Exelon addresses this in its ER, and not just as background information. In its Application and Update, Exelon attempts to use specious arguments, unsupported allegations, and irrelevant studies to minimize the actual fact that Cranes died at all.⁹⁴ As Exelon acknowledges in a footnote, TSEP’s Contention does state precisely how this issue is material: TSEP argues that, with the VCS water diversions, Whooping Crane mortality during low flow conditions will worsen.⁹⁵ As a result, Exelon’s arguments that this Contention is not material must fail.

Exelon disputes reported Crane mortality by USFWS precisely because these facts seriously threaten the chances of Exelon being granted the ESP it seeks. If 23 Whooping Cranes died during the winter of 2008-2009 (which is the factual finding by the USFWS), and if, as TSEP alleges, they were caused ultimately because freshwater inflows were too low, then this confirms the mechanism by which VCS water use will injure, harm, or kill more Cranes. Exelon argues that this is conclusory, when in fact it is merely a logical and analytical assessment. It is not speculative or conclusory for TSEP to argue that greater water diversions will result in less freshwater reaching the bay and that this will magnify the impacts on Whooping Cranes.

TSEP has not suggested that Exelon caused those deaths in 2008-2009. But clearly the fact of the deaths is material because, if Cranes lacked food and other resources during the drought of 2008-2009, then a repeat of the same conditions will cause similar levels of mortality. A repeat of the same conditions while VCS is operating and diverting an additional 75,000 acre feet of water will therefore cause greater mortality than the drought alone. This consideration is vital for NEPA disclosure, and it is vital information for the Section 7 consultation with USFWS.

⁹³ Exelon Answer at 71.

⁹⁴ ER June 24, 2010 Update at 2.4-11; 5.11-7.

⁹⁵ Exelon Answer at 71, n.320, (*citing* Petition at 65).

Exelon attempts to manufacture false uncertainties in its ER, and then asserts that such uncertainties need not be resolved for NEPA purposes when TSEP challenges them.⁹⁶ Exelon's statements in its Application on this issue are a blatant attempt to downplay or minimize the potential impacts. Clearly, there is a genuine dispute on this issue, which Exelon implicitly concedes in the final paragraph of its Answer on this Contention: Exelon states that issues related to the death of the Whooping Cranes would be relevant in a consolidated Contention (for reasons stated below, TSEP do not agree to a consolidated contention). In sum, this Contention speaks to the accuracy of information in an Application submitted to the federal agency, something which is vital to the NRC's ability to comply with NEPA, and therefore it should be admitted.

TSEP-ENV-9 – The Flawed SAGES Report

A. A Statement of the Contention Itself

The ER fails to rigorously explore and objectively evaluate the impact of VCS water use on food resources and energetics of Whooping Cranes. Exelon relies heavily upon the SAGES report, despite the fact that it was universally criticized by experts in the field as flawed. Experts agreed it contained false assumptions, and was inconsistent and contrary to published science. Exelon failed to bring these critical facts to the attention of the NRC. TSEP contends that not only is the SAGES study fatally flawed on important scientific principles, but it also represents a prime example of junk science created by the same water supplier, GBRA, who wants to sell water to Exelon. As such, this contention challenges the use of the SAGES Report under the precedent of *Daubert*.

B. Reply to NRC Staff

The Staff does not oppose the admission of this contention to the extent that it challenges the adequacy of the ER.⁹⁷ TSEP agrees that evidentiary rulings on the admissibility of evidence are not required at this stage of the proceeding.⁹⁸

⁹⁶ Exelon Answer at 71.

⁹⁷ NRC Staff Answer at 58.

⁹⁸ NRC Staff Answer at 58, n.6

C. Reply to Exelon

Again, despite objecting to the admission of this Contention, Exelon concedes that issues raised in this contention are relevant to determine whether VCS water withdrawals will impact Whooping Cranes.⁹⁹

In litigating this contention, TSEP plans to show the serious scientific flaws in the SAGES Study, flaws that nullify the central conclusions upon which Exelon relies when it determined that the impacts of VCS water use on Whooping Cranes is “small.” TSEP’s Contention identifies these flaws in great detail.¹⁰⁰ TSEP identified the specific section of the ER that it disputes.¹⁰¹ For these reasons and more, Exelon’s arguments that this Contention is not material and that there is no genuine dispute must fail.

Exelon hides behind the same arguments addressed above, and for the same reasons, they fail.¹⁰² Exelon argues there is no material dispute because the ER discusses the “various differing scientific views.”¹⁰³ Exelon attempts to bolster the credibility of the SAGES Report by discussing the entities that commissioned it, and that one commenter stated that it did provide some valuable new information.¹⁰⁴ Two state entities commissioned and funded the SAGES Report: the Guadalupe-Blanco River Authority (“GBRA”) and the San Antonio River Authority (“SARA”). Both entities own water rights permits and sell that water to third parties such as Exelon. In litigation, TSEP will show that the SAGES Report was specifically commissioned because GBRA was looking to support a project (the Lower Guadalupe Water Supply Project) that would have divert the same water Exelon now relies on, and send it to municipalities

⁹⁹ Exelon Answer at 64, 76.

¹⁰⁰ Petition at 67–72.

¹⁰¹ Petition at 73.

¹⁰² *Supra*, Reply to Exelon on TSEP-ENV-7 and 8.

¹⁰³ Exelon Answer at 73.

¹⁰⁴ Exelon Answer at 73.

upstream.¹⁰⁵ TSEP will show that GBRA paid for a report to obtain the result they sought, namely that GBRA could continue diverting more water out of the Guadalupe River and that the Cranes would not suffer harm. In short, the reason the commenters found so many flaws in the Report is because it is the very definition of ‘junk’ science with respect to critical aspects of the Whooping Crane viability: blue crabs, modeling whether food resources are sufficient, and the impact of freshwater withdrawals.

Finally, the comments that SAGES provided some valuable new information are because it was a multifaceted project that ranged from Crane population modeling to studying the possible disturbance of Cranes by tourists. The critical aspects of SAGES that Exelon specifically relied upon to support its application are *precisely* the same aspects that USFWS employee Mr. Tom Stehn and other experts have roundly criticized. Due to these important differences of experts’ opinions, TSEP’s contention must be admitted.

Again, Exelon argues that there is no dispute because the ER includes differing opinions.¹⁰⁶ By admitting that there are differing professional and scientific opinions regarding the impacts of reduced freshwater inflows on Whooping Cranes—the essential SAGES finding—Exelon cannot insulate itself from TSEP’s contention. In fact, Exelon essentially concedes these important differences of opinion when it proposes the consolidated contention. Based on these admissions, Exelon should be precluded from further arguments that TSEP’s contention is not material and that there is not a genuine dispute.

For the same reasons explained previously, Exelon’s argument about the annual variation in river flows dwarfing the VCS diversion¹⁰⁷ is absurd and should not be entertained.¹⁰⁸

¹⁰⁵ GBRA temporarily abandoned this project.

¹⁰⁶ Exelon Answer at 74.

¹⁰⁷ Exelon Answer at 75.

¹⁰⁸ *Supra*, Reply to Exelon on TSEP-ENV-8.

Finally, Exelon argues that TSEP merely makes a general challenge to state of the Whooping Crane biology and that this is not material to NRC findings.¹⁰⁹ Exelon accuses TSEP's Contention of impermissibly challenging the "baseline description."¹¹⁰ Exelon misunderstands the intent and purpose of TSEP's Contention. The SAGES report is not relied on by Exelon for a baseline analysis; rather it is cited in support of a prediction that even when freshwater inflows are reduced, Whooping Cranes will not lack sufficient food or water.¹¹¹ This is a critical NEPA question, and this Contention should be admitted.

TSEP-ENV-10 – Reduced Sediment and Nutrient Inflow Into San Antonio Bay

A. A Statement of the Contention Itself

The ER fails to explore and evaluate the impacts that the diversion and consumption of water from the Guadalupe River will have upon the San Antonio Bay due to the reduced sediment and nutrient inflows.

B. Reply to NRC Staff

The Staff does not oppose the admission of this contention.¹¹²

C. Reply to Exelon

Exelon opposes the admission of this contention on the basis that it does not raise a genuine dispute.¹¹³ This is a contention of omission because TSEP alleges that Exelon failed to consider the environmental effects of the proposed action as required by 10. C.F.R. § 51.45(b) and (c). Exelon objects, arguing that this contention is not material, because TSEP's calculations are based on more water than VCS will use, and fails to raise a genuine dispute, claiming to have addressed sediment loads in the ER. Exelon is wrong on both claims.

¹⁰⁹ Exelon Answer at 75–76.

¹¹⁰ Exelon Answer at 76, n.343.

¹¹¹ See ER June 24, 2010 Update at 2.4-12; 5.11-7.

¹¹² NRC Staff Answer at 59.

¹¹³ Exelon Answer at 77.

First, the proposed action in this matter is the construction of VCS and associated infrastructure. One item being licensed here is the raw water makeup (“RWMU”) system consisting of a pumphouse on a canal just off the Guadalupe River, and a pipeline to carry the water to the cooling pond.¹¹⁴ The maximum capacity of the pumphouse is listed in the application as 267 cubic feet per second (“cfs”).¹¹⁵

“a maximum of 217 cfs [] would be supplied to the VCS cooling basin and a maximum of 50 cfs [] would be reserved for future use by another non-VCS entity or entities.”¹¹⁶

Exelon further states that the average pumping rate to the VCS cooling pond “would be approximately 103.5 cfs.”¹¹⁷ This average pumping rate equates to 75,000 acft/yr, the VCS use identified throughout the ER. However, the RWMU pumphouse will also have the remaining capacity of up to 50 cfs for the so-called non-VCS entity or entities. Therefore, in this proceeding, Exelon is also licensing and facilitating the diversion of additional water by a third party, presumably GBRA, the holder of Permit No. 5178. Diversion of 50 cfs translates to 36,000 acft/yr.¹¹⁸ Therefore it is clear that Exelon is seeking to authorize a pumphouse that will divert the up to 105,000 acft/yr, and JCHA properly used this as the basis for the calculations of reduced sediment load (equivalent to 103 cfs for VCS, and 43 cfs by the third party). TSEP’s contention is therefore material to a finding by the NRC in this matter.

Exelon further argues that there is no dispute because the ER acknowledges that “freshwater inflows provide nutrient and sediment to the estuary, and they are one factor affecting salinity gradients in the bay system.”¹¹⁹ This portion of one sentence represents the

¹¹⁴ ER §§ 3.4; 5.2.2.1; 5.3.1 (describing the RWMU system).

¹¹⁵ ER §§ 3.4; 5.3.1.1.

¹¹⁶ ER at 5.3-1.

¹¹⁷ ER at 5.3-1.

¹¹⁸ Permit 5178 authorized total diversions of 106,000 acre feet/year.

¹¹⁹ Exelon Answer at 77 (citing ER 2.3-7, -9).

entirety of Exelon’s so-called analysis. This mere acknowledgement does not approach the ‘hard look’ required by NEPA. Exelon makes no attempt to qualify or quantify these affects.

For the same reasons explained previously, Exelon’s argument about the annual variation in river flows dwarfing the VCS diversion¹²⁰ is absurd.¹²¹ Finally, Exelon argues that TSEP failed to provide support for its contention that it should have performed some additional evaluation beyond its Bio-Statistical Study.¹²² Exelon forgets that it now admits that this same Study is fundamentally flawed and has promised to revise it.¹²³ Exelon itself provides the support by this admission, and further support is found in TSEP-ENV-12 and the Trungale Report.¹²⁴ This contention should be admitted.

TSEP-ENV-11 – Tremendous Aquatic Impacts to San Antonio Bay and its Important Ecosystems

A. A Statement of the Contention Itself

The water used by VCS will have tremendous aquatic impacts; it will result in more severe, more frequent, and longer lasting “man-made” high salinity drought conditions in the San Antonio Bay system. It will also significantly impact the bay’s ecosystems.

B. Reply to NRC Staff

The Staff does not oppose the admission of this contention.¹²⁵

C. Reply to Exelon

Exelon does not oppose the admission of the part of this contention that concerns the Bio-Statistical Study.¹²⁶ Notwithstanding this concession, and Exelon’s concession on the admissibility of a consolidated contention essentially covering the *exact same issues* raised in

¹²⁰ Exelon Answer at 78.

¹²¹ *Supra*, Reply to Exelon on TSEP-ENV-8.

¹²² Exelon Answer at 78, and n.350.

¹²³ Exelon Answer at 82–83 (responding to the Trungale Report and TSEP-ENV-12).

¹²⁴ Petition at 79; 83.

¹²⁵ NRC Staff Answer at 59.

¹²⁶ Exelon Answer at 81; 64.

TSEP-ENV-11, Exelon claims that TSEP has failed to raise a genuine dispute of material fact.¹²⁷ Exelon objects to the water use scenarios modeled by TSEP’s expert, Mr. Trungale, and objects to the inclusion of species other than Whooping Cranes and blue crabs.¹²⁸

TSEP’s salinity modeling represents the state of the art, and is far superior to any analysis that Exelon has done to date. Exelon relies upon the inflows-productivity paradigm with its admittedly-flawed Bio-Statistical Study. As stated in the Trungale Report, this approach is no longer recommended by the Texas Science Advisory Committee for Environmental Flows (“SAC”).¹²⁹ The SAC recommends use of an inflow-salinity-biology paradigm, as used by TSEP, and also by the two scientific teams working on the state-sponsored environmental flows initiatives for the San Antonio and Galveston Bays.¹³⁰ The salinity model used by Mr. Trungale has been thoroughly validated by the Texas Water Development Board.¹³¹

TSEP’s Trungale Report modeled three scenarios: natural, current and proposed, and determined the impacts on salinity under each scenario. The Trungale Report describes the differences between natural and current scenarios, and between current and proposed scenarios.¹³² Exelon complains that Mr. Trungale did not more finely parse out the differences solely attributable to VCS water use.¹³³ But, as a threshold issue for contention admission, TSEP must only make a minimal showing that facts are in dispute and is not required to prove its full case. Exelon also takes issue with Mr. Trungale’s finding of increased drought events;¹³⁴ but other than bare assertions by counsel, Exelon presents nothing to contradict the findings of the Trungale report.

¹²⁷ Exelon Answer at 79.

¹²⁸ Exelon Answer at 79-81.

¹²⁹ Petition, Ex. E-1, Trungale Report, at 5.

¹³⁰ Petition, Ex. E-1, Trungale Report, at 5.

¹³¹ Petition, Ex. E-1, Trungale Report, at 15–17.

¹³² Petition, Ex. E-1, Trungale Report, at 9–15.

¹³³ Exelon Answer at 79–80.

¹³⁴ Exelon Answer at 80–81.

TSEP has clearly raised a genuine dispute, and Exelon’s Answer improperly attempts to rewrite this contention to better suit itself. TSEP’s contention stated clearly that the:

“future conditions including the VCS diversion would result in an increase in the severity, frequency and duration of “man-made” drought conditions, likely leading to an alteration in the ecosystem structure by either reducing overall fisheries production or by favoring one fisheries species production at the expense of others, thereby reducing biodiversity.”¹³⁵

TSEP supported its contention with an expert opinion that was based on accepted methodologies and published scientific literature. Exelon’s argument that TSEP must identify the specific species that constitute the “fisheries” and “biodiversity” lacks any support in law. The authority cited by Exelon in footnote 367 is inapposite here because it only concerns the requirement that a petitioner identify specific species if they are endangered or threatened.¹³⁶ TSEP did identify the Whooping Crane, and is under no obligation at this stage to identify, by name, every single species constituting the “fisheries” and “biodiversity” of the entire San Antonio Bay ecosystem.

The potential aquatic impacts described in the Trungale Report are caused by the salinity changes he modeled. Salinity is a vital factor in estuarine ecosystems such as the San Antonio Bay. This Contention includes the impacts upon Whooping Crane resources and upon the other aquatic resources, hence the contention includes fisheries and biodiversity.¹³⁷ TSEP urges that this contention on aquatic impacts be admitted in full.

TSEP-ENV-12 – Adverse Modification of Whooping Crane Designated Critical Habitat

A. A Statement of the Contention Itself

The water used by VCS will have tremendous aquatic impacts; it will result in more severe, more frequent, and longer lasting “man-made” high salinity drought conditions in the San Antonio Bay system. It will significantly impact the bay’s ecosystems and will adversely modify designated critical habitat for an endangered species.

¹³⁵ Petition at 78 (citing Ex. E-1, Trungale Report, at 1.); *see also* 75–76.

¹³⁶ Exelon Answer at 81, n.367 (citing *Turkey Point*, LBP-01-6, 53 NRC at 156-57).

¹³⁷ Petition at 80.

B. Reply to NRC Staff

The Staff does not oppose the admission of this contention.¹³⁸

C. Reply to Exelon

Exelon does not oppose the admission of the part of this contention that concerns the Bio-Statistical Study.¹³⁹ Exelon admits that its Bio-Statistical Study submitted to the NRC is critically flawed and will revise its.¹⁴⁰ The flaws were revealed in the Trungale Report, who described it as “burying the impacts of the project in the baseline.”¹⁴¹ TSEP appreciates Exelon’s willingness to acknowledge the error.

However, this Contention is much broader than simply the impact on the four species evaluated in Exelon’s flawed study. This contention directly addresses whether the NRC can issue the ESP if all the substantive requirements of the federal Endangered Species Act are not met. The NRC is prohibited from approving Exelon’s ESP if, after consultation with the FWS, the agency finds that the action will result in either a jeopardy finding, or that it will significantly modify designated critical habitat.¹⁴² Exelon’s Application mentions the existence of designated critical habitat for the Whooping Crane, but almost as an afterthought.

Exelon’s answer to this contention does not address the ESA issues raised by TSEP, but simply incorporates their answers to TSEP-ENV-11. TSEP fully replied and rebutted these arguments in its Reply on TSEP-ENV-11, and incorporates them here. For the same reasons, and because Exelon fails to specifically object to the ESA aspects of this contention, Exelon’s arguments must fail and this contention should be admitted in its entirety.

¹³⁸ NRC Staff Answer at 60.

¹³⁹ Exelon Answer at 83; 64;

¹⁴⁰ Exelon Answer at 82–83.

¹⁴¹ Petition at 79; Ex. E-1, Trungale Report, at 2.

¹⁴² 16 U.S.C. §1536(a)(2).

TSEP-ENV-13 – Monitoring Impacts to Whooping Crane Designated Critical Habitat

A. A Statement of the Contention Itself

Exelon fails to satisfy 10 C.F.R. § 51.50(b)(4) because Exelon has not identified the procedures to protect the endangered Whooping Cranes' environment, specifically the designated critical habitat at the Aransas National Wildlife Refuge.

B. Reply to NRC Staff

The Staff does not oppose the admission of this contention.¹⁴³

C. Reply to Exelon

Exelon objects to this contention because it fails to raise a genuine dispute.¹⁴⁴ Exelon argues that the Whooping Cranes are already monitored, it is too early for Exelon bother doing any monitoring, and the Section 7 consultation process might require it.¹⁴⁵ Notably, implicit in Exelon's answer is an admission that they did not include any monitoring procedures in the Application. Thus Exelon concedes, without saying so, that they failed to comply with applicable NRC regulations.¹⁴⁶ This alone justifies the admission of TSEP's contention.

Exelon's arguments for its failure to comply with the regulation are meritless. The fact that someone else is monitoring the Whooping Cranes at the Aransas National Wildlife Refuge ("ANWR") does not absolve Exelon of addressing the issue. The regulation requires that Exelon identify "conditions and monitoring requirements for protecting the non-aquatic environment." 10 C.F.R. § 51.50(b)(4). These must be proposed at the application stage because the NRC may then include them in the ESP license. *Id.* Exelon simply misses this point.

¹⁴³ NRC Staff Answer at 60.

¹⁴⁴ Exelon Answer at 83–85.

¹⁴⁵ Exelon Answer at 83–85.

¹⁴⁶ *See* 10 C.F.R. § 51.50(b)(4).

Exelon argues that an old, 1979, *TVA* case rejected the notion that monitoring of an endangered species of mussel was necessary before plant operation.¹⁴⁷ Here, we are discussing potential threats to the last remaining wild flock of Whooping Cranes on the planet, not mussels.¹⁴⁸ This last remaining wild flock exists only at ANWR, and Exelon will not even agree to monitor its health as required, must less recognize the potential catastrophe that might occur if they actually construct the proposed VCS plant. This contention is clearly admissible.

TSEP-ENV-14 – Compliance with the Endangered Species Act

A. A Statement of the Contention Itself

The Exelon application does not include sufficient or accurate information to enable the NRC to comply with the requirements of the federal Endangered Species Act, 16 U.S.C. § 1531 *et seq.*, because Exelon has not rigorously explored or objectively evaluated the impacts of the proposed VCS plant on listed Whooping Cranes.

B. Reply to NRC Staff

The Staff does not oppose the admission of this contention.¹⁴⁹

C. Reply to Exelon

This contention might be considered the bookend to TSEP-ENV-7. As with that Contention, TSEP incorporated by reference all its other related contentions, TSEP-ENV-7, 8, 9, 10, 11, 12, and 13. Therefore, when Exelon asserts that TSEP fails to provide any support for its claim,¹⁵⁰ Exelon again ignores all the supporting facts and opinions outlined in great detail in the other seven contentions. Exelon argues that TSEP has failed to raise a genuine dispute material

¹⁴⁷ Exelon Answer at 84.

¹⁴⁸ TSEP does not mean to imply that one listed species is less deserving of protection than another. It is clear that the ESA does not distinguish between listed mussels and Whooping Cranes.

¹⁴⁹ NRC Staff Answer at 61.

¹⁵⁰ Exelon Answer at 86.

to this proceeding.¹⁵¹ First, TSEP agrees with Exelon that the NRC will have to consult with USFWS before issuing this ESP.¹⁵² But that simple point is not the contention here.

Exelon's other arguments also miss the point, and impermissibly attempt to argue the merits at the contention stage. Exelon argues that TSEP does not provide support that VCS water use may rise to the level of a "jeopardy" or "adverse modification finding"¹⁵³ claiming that it is a "high standard."¹⁵⁴ It is true that a finding of some adverse effect on a listed species does not automatically prohibit the federal action, but in that circumstance, other provisions of the ESA come into effect. For example, after consultation, the FWS may propose "reasonable and prudent alternatives" to the NRC, or issue a Biological Opinion and Incidental Take Statement. 16 U.S.C. § 1536(b)(4)(A)–(B). The Incidental Take Statement would include the amount or extent of anticipated take due to the federal action, reasonable and prudent measures to minimize the take, and terms and conditions that must be observed when implementing those measures. 16 U.S.C. § 1536(b); 50 C.F.R. § 402.14(h)–(i). Compliance with Section 7 of the ESA is much more complicated than Exelon argues, but the heart of TSEP's contention is that the Application does not come close to meeting the standard of information required for the NRC to consult with FWS: "In fulfilling the requirements of [Section 7(a)(2)] each agency shall use the best scientific and commercial data available." 16 U.S.C. § 1536(a)(2). TSEP's genuine dispute with Exelon is set forth in excruciating detail in the preceding seven contentions (incorporated in TSEP-ENV-14); Exelon admits that there is a dispute¹⁵⁵ and admits that one of its studies is critically flawed.¹⁵⁶

¹⁵¹ Exelon Answer at 86.

¹⁵² Exelon Answer at 86.

¹⁵³ Exelon Answer at 86–87.

¹⁵⁴ Exelon Answer at 87.

¹⁵⁵ Exelon Answer at 62 "it appears there is a genuine dispute."

¹⁵⁶ Exelon Answer at 82–83.

Exelon further attempts to downplay the import of the Whooping Crane issue when it discusses that the wild population has “increased by a factor of fifteen over the last 60 years.”¹⁵⁷ Exelon appears to argue that this fact might preclude a jeopardy finding.¹⁵⁸ However, the Whooping Crane remains in dire peril, and the ongoing recovery efforts are threatened by Exelon’s VCS water use.

The Whooping Crane still hovers on the brink of extinction. Aransas National Wildlife Refuge provides the winter home for the last remaining naturally-migrating flock of Whooping Cranes. Only 263 individual birds existed in this natural flock at the end of the 2010 season, as counted by federal officials. When added to the Cranes that are in captivity or artificially-supported flocks, the entire worldwide population numbers a little over 500.

Exelon glibly implies that the Whooping Crane is recovering. This not only shows stunning scientific ignorance, but reflects Exelon’s lack of understanding regarding the peril of this endangered species. After 73 years of intensive management and protection, this Whooping Crane flock has only reached one quarter of the population goal set by the U.S. Fish and Wildlife Service (“FWS”)—the point at which FWS would support downlisting from ‘endangered’ to ‘threatened’.¹⁵⁹ That is, even if this population were four times greater than today, it would still need ESA protection as ‘threatened.’

When small populations like the Whooping Crane, are limited to a highly restricted area of suitable habitat, as at Aransas, the species will remain vulnerable. However, thanks to the protections afforded by the ESA and the obligations it imposes on federal agencies—including the NRC—as well as on Exelon, every conceivable effort must be undertaken to prevent the

¹⁵⁷ Exelon Answer at 87.

¹⁵⁸ Exelon Answer at 88.

¹⁵⁹ Petition at Ex. I, International Recovery Plan Whooping Crane, at 37-38 (3d. Revision, March, 2007). Recovery Plan has a goal of 1000 individual birds for the Aransas flock of Whooping Cranes before the FWS will consider downlisting the species to ‘threatened’ status.

decimation or extinction of a listed species. *See Tennessee Valley Auth. v. Hill*, 437 U.S. 153, 174, 180 (U.S. 1978).

Moreover, while Whooping Cranes are somewhat more numerous than they were decades ago, progress cannot be taken for granted. Federal counts revealed terrible losses—23 birds dead—during the winter of 2008–2009.¹⁶⁰

In any event, whether or not the Whooping Crane is recovering is irrelevant because the Crane remains a species listed as ‘endangered’ under the ESA.¹⁶¹ It is, therefore, protected against takes, jeopardy and significant modification of designated critical habitat to the full extent of the law.

TSEP-ENV-7, 8, 9, 10, 11, 12, 13, and 14 – Reply to Exelon on the Proposed Consolidated Contention on Aquatic Impacts and Whooping Crane Impacts

Exelon concedes that TSEP has submitted, in aggregate, what constitutes an admissible set of contentions regarding both aquatic impacts of VCS water use, and impacts on the Whooping Cranes.¹⁶² Exelon therefore does not oppose the admission of a consolidated contention on these issues, and proposes specific language for this contention.¹⁶³ TSEP recognizes that it is highly unusual for an NRC applicant to concede on the admissibility of a contention, and appreciates Exelon’s effort to propose the language of a consolidated contention. However, at this stage, TSEP cannot agree to Exelon’s proposed consolidated contention.

Exelon concedes that parts of TSEP-ENV-11 and 12 are admissible as far as they concern Exelon’s flawed Bio-Statistical Study.¹⁶⁴ Exelon further concedes that “some of the issues raised in Contentions TSEP-ENV-7, 8, and 9 ... may come into play in litigating a single, consolidated

¹⁶⁰ Petition at 61–65.

¹⁶¹ 50 C.F.R. §§ 17.11(h).

¹⁶² Exelon Answer at 62–64.

¹⁶³ Exelon Answer at 63.

¹⁶⁴ Exelon Answer 81; 83.

contention” on Whooping Crane impacts.¹⁶⁵ Exelon’s proposed consolidated contention is restricted to the impacts of VCS water withdrawals upon bay salinity, Whooping Crane resources, and the Cranes themselves.¹⁶⁶ TSEP notes that Exelon’s description of its Bio-Statistical Study does not anywhere address Whooping Crane impacts. Rather the Study attempts to consider the impacts of water salinity upon four bay species, one of which is the blue crab.¹⁶⁷ The Exelon Study does not attempt to analyze the impacts of VCS water diversions upon salinity. The Exelon Study does not attempt to analyze the impacts of salinity upon designated critical habitat and other Whooping Crane resources. The Study does not attempt to analyze impacts upon Whooping Cranes themselves. Therefore, TSEP struggles to comprehend how Exelon manages to propose their consolidated contention (which includes Whooping Crane impacts) while simultaneously opposing TSEP’s contentions concerning Whooping Crane impacts.

TSEP is not, as a matter of principle, opposed to consolidating certain contentions, as appropriate, and once they have been properly and individually admitted. However, at this stage TSEP urges the Licensing Board to independently consider each of TSEP’s Whooping Crane contentions, and agree with the NRC Staff that they all be admitted.

TSEP-ENV-15 – Socioeconomic Impacts of Plugging Wells and of the Impacts on Mineral Rights Holders

A. A Statement of the Contention Itself

Exelon’s ER fails to address the economic impacts of plugging oil and gas wells, and impacts of the VCS on owners of onsite and adjacent mineral rights.

¹⁶⁵ Exelon Answer at 64.

¹⁶⁶ See Exelon Answer at 63; 69; 76.

¹⁶⁷ TSEP must rely on the description of the Bio-Statistical Study in the Exelon ESP Application. TSEP has not seen the Study itself, not has Exelon made it a part of the publicly-available Application.

B. Reply to NRC Staff and Exelon

TSEP understands that the NRC regulations allow an applicant to defer the cost-benefit or economic analysis until the COL stage, as Staff and Exelon repeatedly argue. However, TSEP submitted this contention because it really goes to the issue of the overall suitability of the site. It may be a purely economic issue for Exelon, but as TSEP urges its contention, TSEP-SAFETY-3, there are safety consequences, and as urged in TSEP-ENV-1, there are environmental consequences too. Unless Exelon fully commits to, or the NRC requires the identification and plugging of all the oil and gas wells and boreholes on the site, safety and environmental risks increase. Engineering considerations created by specific conditions or characteristics at a particular site should be considered and disclosed in the NEPA documents. At a minimum, they should be considered in the alternative site analysis. TSEP submitted its contention on the obviously superior site at Matagorda County, and included the comparison of oil and gas activities at both sites. If the Licensing Board finds that this contention is inadmissible, it should admit TSEP-ENV-16 in full where the issue will be litigated, albeit in a slightly different context.

TSEP-ENV-16 – Obviously Superior Alternative Site at Matagorda County

A. Statement of the Contention Itself

The Exelon ER does not comply with 10 C.F.R. § 51.50(b)(1) because it fails to rigorously explore and objectively evaluate all alternative sites. A comparison of the Matagorda County site and the Victoria County Station site shows that the Matagorda County site presents an obviously superior site for the construction and operation of a nuclear power plant. The alternative Matagorda County site considered by Exelon does not have the serious problems and large impacts identified at the Victoria site.

B. Reply to Both NRC Staff and Exelon: The Purpose and Scope of a NEPA Alternatives Analysis

Both the NRC Staff and Exelon attempt to parse out narrow bases for the alternatives analysis contention, and in so doing, misunderstand and undermine the purpose of the NEPA alternatives analysis. The purpose and scope of NEPA is broad. *See Foundation for North American Wild Sheep v. U.S. Dept. of Agr.*, 681 F.2d 1172, 1177 (9th Cir. 1982) (noting the “exceptionally broad scope of NEPA” and stating that “NEPA represents a firm Congressional mandate that environmental factors be considered on an equal basis with other, more traditional, concerns”) (citing *Calvert Cliffs' Coordinating Committee, Inc. v. Atomic Energy Comm'n*, 449 F.2d 1109, 1122 (D.C.Cir. 1971)). According to the U.S. Court of Appeals for the D.C. Circuit,

NEPA mandates a case-by-case balancing judgment on the part of federal agencies. In each individual case, the particular economic and technical benefits of planned action must be assessed and then weighed against the environmental costs; alternatives must be considered which would affect the balance of values.

Calvert Cliffs' Coordinating Committee, Inc., 449 F.2d at 1123. This means that, in the big picture of NEPA, the purpose is to rigorously explore the flaws of a site, across a range of considerations (not just purely environmental ones) in order to ensure a careful and reasoned judgment by the federal agency. This consideration mandates that all bases for TSEP alternatives contention be admitted.

Additionally, NEPA itself clearly contemplates a variety of considerations beyond just those that, according to the NRC Staff, are narrowly considered environmental. For example, there is ample NEPA case law evaluating socioeconomic considerations, such as cost, as part of an alternatives analysis. *See, e.g., National Wildlife Federation v. Marsh*, 568 F.Supp. 985, 997-98 (D.C.D.C. 1983) (determining that omission of certain cost data violated NEPA); *Gloucester County Concerned Citizens v. Goldschmidt*, 533 F.Supp. 1222, 1231 (D.C.N.J. 1982) (discussing with approval the inclusion of an analysis of “costs versus benefits, and the impact of the

[project] upon cultural, aesthetic and socio-economic resources”). As a result, if the NRC Board does not investigate the full range of NEPA factors, including considerations such as cost or other socio-economic factors, then the NRC is not fully complying with NEPA.

Also, and importantly, safety concerns raised under the Atomic Energy Act and environmental concerns raised under NEPA are not mutually exclusive. The best explanation is found in the case *Citizens for Safe Power v. NRC*; it states:

The Atomic Energy Act was passed years before broader environmental concerns prompted enactment of the Environmental Protection Policy Act [NEPA]. Yet many of those same concerns permeated provisions of the first-mentioned legislation and the regulations promulgated in accordance with its mandate. To say that these must be regarded independently of the constantly increasing consciousness of environmental risks reflected in proceedings with reference to NEPA, would make for neither practicality nor sense. Nor can AEA requirements be viewed separate and apart from NEPA considerations.

Especially in view of NEPA, it also is unreasonable to suppose that risks are automatically acceptable, and may be imposed upon the public by virtue of AEA, merely because operation of a facility will conform to the Commission’s basic health and safety standards. *The weighing of risks against benefits in view of the circumstances of particular projects is required by NEPA in view of AEA.* The two statutes and the regulations promulgated under each must be viewed in *para materia*.

524 F.2d 1291, 1299 (D.C. Cir. 1975) (emphasis added). In another case, a federal appeals court held that the NRC cannot look to sufficiency under the AEA to avoid its NEPA obligations to consider reactor design alternatives. *See Limerick Ecology Action v. NRC*, 869 F.2d 723, 730 (3rd Cir. 1989).

According to NRC regulations specifically, in public hearings on early site permits, the presiding officer of the ASLB must:

Determine, after weighing the environmental, economic, technical, and other benefits against environmental and other costs, and considering reasonable alternatives, whether the construction permit or early site permit should be issued, denied, or appropriately conditioned to protect environmental values.

10 C.F.R. § 51.105(a)(3). Clearly, a broad range of concerns is contemplated both in the case law and in the regulations.

Thus all of these considerations and authorities dictate that an alternatives analysis is a broad inquiry, and any arguments by the NRC Staff or Exelon to the contrary must fail. TSEP has properly raised issues such as faulting; oil and gas wells; and pipelines as part of its alternative analysis contention. These issues are not only environmental in nature but also speak to the costs of the project. And, because the NRC Staff did not oppose contentions related to growth faults and oil and gas wells, there is no question that those bases should be included in TSEP's alternatives analysis contention.

Finally, it is worth noting that part of the consideration when looking at cost is the extra cost required for compliance with the law. In other words, one lens through which to view considerations related to oil and gas wells and growth faults is that such issues, when more extensive than the applicant realizes, will result in greater overall costs. This too is relevant and part of an alternatives analysis.

C. Reply to NRC Staff

The NRC Staff does not oppose the admission of this Contention with respect to the downstream ecological impacts and impacts on the Whooping Crane and other migratory birds.¹⁶⁸ The Staff opposes the remaining bases for the Contention, including comparisons between the sites of water availability, growth faulting, and oil and gas activities. On these remaining bases, the NRC Staff argues that TSEP failed to show that there is a genuine dispute. But, for these remaining bases, Staff's position of the appropriate scope of the alternatives analysis required to satisfy NEPA is inconsistent and illogical.

¹⁶⁸ NRC Staff Answer at 65.

The Staff agrees to the admission of the contention on two bases: (1) those related to Whooping Cranes and (2) those related downstream ecological impacts.¹⁶⁹ Because Staff did not oppose TSEP-ENV-7, 8, 9, 10, 11, 12, 13, and 14, it is therefore logical that the Staff would not oppose portions of TSEP's alternative site contention related to impacts to Whooping Cranes and downstream ecology.

Staff's inconsistent approach is evident when one considers their objections on the other bases, especially in light of Staff's positions on TSEP's other contentions and in light of the whole purpose of the alternative site analysis. For example, NRC Staff objects to growth faults and oil and gas activities in the alternatives contention, but do not object to large portions of TSEP's safety contentions (TSEP-SAFETY-1, 2, 3) on the same topics. If there are growth faults all over the site and this makes it more expensive to build or operate on that site as compared to another site, this is certainly admissible as a basis for the alternative analysis contention. Moreover, in light of the broad purpose and scope of NEPA, it is illogical for the NRC Staff to parse out only a few admissible bases.

Among the admissible safety contentions are that there are faults, boreholes, or wells under or close to the powerblock. An admissible NEPA alternatives contention would then be that if the applicant is aware of this, and they have to redesign, build around, pour more concrete, and fill up all the holes, this is an economic cost that they must incur to protect the environment. The entire purpose of the alternatives analysis is to determine if the Applicant (or the NRC) should do something different on that site (*e.g.* solar), or should go somewhere else to construct the plant. The question of whether it is cheaper to conduct the same activity at the alternate site in order to protect the environment is the central inquiry for NEPA purposes.

¹⁶⁹ NRC Staff Answer at 70.

Importantly, it is inconsistent for the NRC Staff to accept, in whole or in part, TSEP-SAFETY-1, 2, and 3; and then oppose those portions of TSEP’s alternative site contention that are related to the very same issues. TSEP urges that *all* portions of this alternatives site contention should be admitted. The NRC Staff has consented to the disagreement between Exelon and TSEP with regard to growth faults and oil and gas wells. These clearly should be part of TSEP’s admitted contention. The other two bases—water availability and oil and gas pipelines—also represent genuine and material disputes with Exelon and warrant admission as well.

Water Availability

As discussed, there is clearly a genuine dispute with Exelon on the issue of water availability. TSEP has briefed this issue in TSEP-ENV-2 – 6. Contrary to the assertions by NRC Staff and Exelon, TSEP has challenged Exelon’s future water availability analysis and has alleged future impacts that are “reasonably foreseeable.” TSEP strongly contends that water-related issues are a key aspect of the acceptability of this site and its designation under the ESP process. Without repeating its arguments, TSEP reiterates that it has taken issue with Exelon and NRC Staff’s ill-founded reliance on the Region L Plan as well as Exelon’s inability to identify precisely where its water will come from. And as stated, in the case *South Texas Project Nuclear Operating Co.*, there is precedent for admitting water-use contentions.¹⁷⁰

Additionally, issues related to water availability are closely linked to issues of downstream ecology. Both the NRC Staff and Exelon accept that there is a genuine issue with regard to downstream water impacts on the bay and estuary system. Logically, if they can agree that VCS water use will impact the downstream ecosystem, then they should also be able to

¹⁷⁰ *South Texas Project Nuclear Operating Co.* (South Texas Project, Units 3 and 4), LBP-09-25, 70 NRC 867, 892 (2009).

agree that VCS water use has an impact on regional water availability. Water is a finite resource; particularly in this region of Texas, it is a relatively scarce resource. If water use by VCS affects the Whooping Cranes and the San Antonio Bay system, then it also affects and impacts other water users. For all the reasons discussed with regard to TSEP-ENV 2 – 6, and 7 – 14, TSEP urges that issues related to water availability are strongly at play in these proceedings.

Growth Faults; Oil and Gas Wells; Oil and Gas Pipelines

NRC Staff argues that these issues are not environmental ones and thus not appropriate for this contention. TSEP believes that it has clearly responded to this erroneous argument in Section B above, which shows that NEPA (especially in the context of an NRC proceeding) contemplates a broad range of issues, not narrowly or strictly “environmental” ones.

Moreover, another important response to this argument is that, in Exelon’s evaluation of alternative sites, Exelon clearly and explicitly evaluated considerations beyond environmental ones. In its Answer, Exelon states: “Exelon... evaluated the candidate sites using a ratings process that considered factors such as environmental, *socioeconomic*, and *engineering criteria*.”¹⁷¹ Thus, if Exelon is evaluating the alternatives on bases such as socioeconomics and engineering, then plainly TSEP can dispute Exelon’s flaws on the same criteria. These criteria—growth faults, oil and gas wells, and oil and gas pipelines—are relevant, and TSEP can critique Exelon on the same grounds that Exelon has evaluated.

With respect to the growth fault issue in particular, NRC Staff specifically mentions dam failure. NRC Staff states that TSEP has not specified what environmental consequences of dam failure may be and that TSEP has not identified a dispute with the ER. As discussed under TSEP-SAFETY-1, this argument is clearly specious. TSEP has urged that Exelon’s dam failure analysis was inadequate and that, because there has been no analysis of dam breach at the location of the

¹⁷¹ Exelon Answer at 91 (emphasis added).

actual fault, there may be important safety consequences that are, as of yet, unexplored. This represents a clear dispute.

D. Reply to Exelon

Exelon argues that this Contention does not raise a genuine dispute of material fact, but this argument fails on its face because Exelon has not objected to contentions based on impacts to the Whooping Cranes and downstream ecological impacts—and considerations regarding the Whooping Crane and ecological impacts play an important basis for this alternatives analysis contention. Exelon explains that it concluded that impacts on water use, aquatic impacts, and endangered species was “SMALL” at the VCS site, and, for reasons discussed at length in other contentions (ENV-7-14), this is plainly a genuine dispute with TSEP’s position, which maintains that such impacts are very large.

Exelon’s Answer focuses on the site selection process and claims that “TSEP does not dispute the site selection process used by Exelon.” However, Exelon misses the point—the focus of TSEP’s contention is not on the minutiae of the process but on the end result. The process led Exelon to choose the VCS site when another site at Matagorda County is obviously superior. Implicitly, TSEP has contested the process, but whether the process followed one kind of format, or another, is secondary to the fact that the process resulted in the wrong conclusion. It is the conclusion that is the important basis for TSEP’s contention.

Moreover, even if the minutiae of the process were part of TSEP’s contention, TSEP observes that Exelon did not reveal many aspects of its scoring methodology—whether entire categories, such as the presence or absence of growth faults or the presence or absence of oil and gas wells were even evaluated. As noted above, TSEP recognizes that Exelon considered a range of factors “such as environmental, socioeconomic, and engineering criteria.”

Exelon argues that TSEP is “bootstrapping” other contentions into this one. This argument, too, misses the point. The purpose of this Contention is to illustrate the failure by Exelon to recognize an “obviously superior” site—the site in Matagorda County is superior for a number of reasons, including for reasons detailed in other of TSEP’s contentions. It is natural the same facts and arguments would appear here. TSEP is not attempting to bootstrap an argument because TSEP has been explicit in urging that all of the bases should be part of the alternatives analysis contention.

Exelon also argues that any change of evaluation with respect to the Whooping Crane impacts would not result in a change to the alternatives analysis.¹⁷² This argument has no merit. Under the most detrimental scenario to Exelon, Exelon states that, should the impacts be “LARGE” and pose a violation of the Endangered Species Act, then Exelon would “need to implement mitigating measures.” This response fails to understand the range of remedies under the federal Endangered Species Act. A violation of the ESA may essentially foreclose the possibility of construction at the VCS site, *see, e.g., Loggerhead Turtle v. County Council of Volusia County, Fla.*, 148 F.3d 1231, 1254 (11th Cir. 1998) (stating that a district court in an ESA case has a wide range of effective injunctive relief), and this clearly would render the Matagorda County site obviously superior.

Alternatively, while a Section 7 consultation resulting in a finding of adverse effect on a listed species does not automatically prohibit the federal action, but in that circumstance, other provisions of the ESA come into effect. For example, after consultation, the FWS may propose “reasonable and prudent alternatives” to the NRC, or issue a Biological Opinion and Incidental Take Statement. 16 U.S.C. § 1536(b)(4)(A)–(B). The Incidental Take Statement would include the amount or extent of anticipated take due to the Federal action, reasonable and prudent

¹⁷² Exelon Answer at 93-94.

measures to minimize the take, and terms and conditions that must be observed when implementing those measures. 16 U.S.C. § 1536(b); 50 C.F.R. § 402.14(h)–(i).

Exelon also argues that the alternatives analysis looks “at all factors collectively” and that TSEP has not applied this standard.¹⁷³ This argument is disingenuous because Exelon itself looked at factors individually: this is the foundation of its complex scoring system. Whether the factors are looked at “individually” or “collectively” is just a matter of how the analysis is ultimately presented. Relatedly, Exelon argues that TSEP has failed to challenge pertinent information, including Exelon’s scored categories.¹⁷⁴ This argument too is disingenuous because TSEP plainly has challenged Exelon’s bases in its alternatives analysis. One category specifically listed by TSEP, for example, is “geology/seismology.” And, other categories that TSEP discusses are clearly ones that TSEP argues were inadequately considered by Exelon. The fact that TSEP did not tick through each category that Exelon proposes does not mean that TSEP has failed to challenge Exelon’s alternative analysis. There is a genuine dispute on which location is “obviously superior” for the siting of Exelon’s proposed plant, and this contention plainly warrants admission on all the bases advocated by TSEP.

Combined Reply Concerning 17 & 18.

TSEP-ENV-17 – ER Lacks Basis for Reliance on Waste Confidence Rule

A. A Statement of the Contention Itself

In Section 5.7.1.6 of the ER, Exelon relies on the Waste Confidence Decision for its assertion that a repository can and likely will be developed at some site that will comply with radiation dose limits imposed by the U.S. Environmental Protection Agency. *Id.* at 5.7-7. Because the assertion is not supported by an EIS, however, the ER is inadequate to comply with NEPA.

¹⁷³ Exelon Answer at 94-95.

¹⁷⁴ Exelon Answer at 94.

TSEP-ENV-18 – ER Lacks Basis for Reliance on Table S-3

B. A Statement of the Contention Itself

The ER lacks an adequate legal or factual basis to rely on Table S-3 for its assessment of the environmental impacts of the uranium fuel cycle because the assumptions on which Table S-3 is based are grossly outdated.

C. Reply to NRC Staff and Exelon

The NRC Staff and Exelon oppose the admission of Contentions 17 and 18 on the ground that they constitute impermissible attacks on NRC regulations and that they are not accompanied by a petition to suspend or waive those regulations. TSEP has submitted Contentions 17 and 18 for purposes of preserving claims that it made in its comments on the NRC's proposed Waste Confidence Update and Temporary Spent Fuel Storage rule regarding the inadequacy of the NRC's generic analysis of spent fuel disposal impacts to support the issuance of an ESP for the Victoria site. Having participated in that generic proceeding, TSEP does not believe it is necessary to take any further procedural actions to preserve its claims in this proceeding. Therefore TSEP has nothing further to add to its previous arguments and seeks a ruling from the Board on the admissibility of its contentions.

TSEP notes that on February 18, 2011, three other parties who had joined TSEP's comments appealed those decisions to the D.C. Circuit. *See Blue Ridge Environmental Defense League, et al. v. NRC*, No. 11-1056. The decisions have also been appealed in the D.C. Circuit by several state governments (No. 11-1045), the Natural Resources Defense Council (No. 11-1051), and the Prairie Island Community (No. 11-1057). If any of those appeals is successful and the Waste Confidence Update and Temporary Spent Fuel Storage rule are reversed, TSEP will seek reinstatement of Contentions 17 and 18.

CERTIFICATE OF SERVICE

I hereby certify that on this 2nd day of March, 2011, copies of the foregoing TEXANS FOR A SOUND ENERGY POLICY'S CONSOLIDATED REPLY TO NRC STAFF AND EXELON NUCLEAR TEXAS HOLDINGS, LLC'S ANSWERS has been served upon the following persons by Electronic Information Exchange.

s/ James B. Blackburn, Jr.

James B. Blackburn, Jr.

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

Michael M. Gibson, Chair
Administrative Judge
Atomic Safety and Licensing Board Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001
Email: michael.gibson@nrc.gov

Dr. Anthony J. Baratta, Administrative Judge
Atomic Safety and Licensing Board Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001
Email: anthony.baratta@nrc.gov

Dr. Mark O. Barnett, Administrative Judge
Atomic Safety and Licensing Board Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001
Email: mark.barnett@nrc.gov

Office of Commission Appellate Adjudication
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
Email: ocaamail@nrc.gov

U.S. Nuclear Regulatory Commission
Office of the Secretary of the Commission
Mail Stop O-16C1
Washington, DC 20555-0001
Hearing Docket
Email: hearingdocket@nrc.gov

U.S. Nuclear Regulatory Commission
Office of the General Counsel
Mail Stop O-15-D21
Washington, DC 20555-0001
Sarah W. Price, Esq.
Laura Goldin, Esq.
Kevin C. Roach, Esq.
Joseph Gilman, Paralegal
Emails: sarah.price@nrc.gov
laura.goldin@nrc.gov
kevin.roach@nrc.gov
jsg1@nrc.gov
OGC Mail Center:
OGCMailCenter@nrc.gov

Steven P. Frantz
Stephen J. Burdick
Jonathan M. Rund
Mary Freeze
Joseph B. Fray
Morgan Lewis & Bockius, LLP
1111 Pennsylvania Ave., NW
Washington, DC 20004
Emails: sfrantz@morganlewis.com
sburdick@morganlewis.com
jrund@morganlewis.com
mfreeze@morganlewis.com
jfray@morganlewis.com

J. Bradley Fewell
Exelon Generation Co., LLC
4300 Winfield Road
Warren, IL 60555
Email: bradley.fewell@exeloncorp.com

ATTACHMENT 1

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

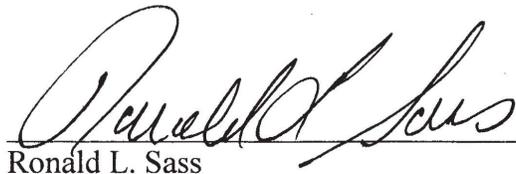
**DECLARATION OF RONALD L. SASS IN SUPPORT OF
TEXANS FOR A SOUND ENERGY POLICY'S
CONSOLIDATED REPLY TO NRC STAFF AND
EXELON NUCLEAR TEXAS HOLDINGS, LLC'S ANSWERS**

I, Ronald L. Sass, Ph.D., declare pursuant to 28 U.S.C. § 1746, on personal knowledge and under penalty of perjury, that the following is true and correct:

1. I am a resident of the Harris County, Texas. I am over 21 years of age and have never been convicted of a felony. This declaration is submitted in support of Texans for a Sound Energy Policy's ("TSEP") Consolidated Reply to NRC Staff and Exelon Nuclear Texas Holdings, LLC's Answers.
2. On January 21, 2011 I submitted a Declaration and attached a report in support of TSEP's Petition to Intervene and Contentions. I have reviewed the NRC Staff and Exelon Nuclear Texas Holdings, LLC's Answers to TSEP's Petition. I submit this Declaration to clarify one matter.
3. My report and prior Declaration discuss the impacts of climate change in the Guadalupe River Basin that are predicted to occur by the year 2100. This date was chosen because the best model available for this region used this date. The predicted impacts of climate change will gradually accumulate between now and 2100 and reach the predicted freshwater deficit of 270,000 acft/yr by 2100. Therefore, significant impacts will occur before that date.

I, RONALD L. SASS, DECLARE UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE UNITED STATES OF AMERICA THAT THE FOREGOING IS TRUE AND CORRECT.

Executed this 1 day of March, 2011.



Ronald L. Sass