

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD PANEL

**In the Matter of
South Texas Project Nuclear Operating Co.
Application for the South Texas Project
Units 3 and 4
Combined Operating License**

Docket Nos. 52-012, 52-013

**INTERVENORS' CONSOLIDATED RESPONSE TO NRC STAFF'S ANSWER TO THE
INTERVENORS' NEW ACCIDENT CONTENTIONS AND APPLICANT'S ANSWER
OPPOSING NEW CONTENTIONS REGARDING APPLICANT'S ENVIRONMENTAL
REPORT SECTION 7.5S**

Introduction

Intervenors offer the following Consolidated Response to the Staff's and Applicant's Answers to the co-location accident contentions CL-1 – CL-4.¹ CL-1 raises the general allegation that the Applicant's ER revisions² are an inadequate assessment of the impacts of a severe accident at one unit on the other co-located units.³ CL-1 is divided into subparts, A-D. For purposes of this response CL-2, 3 and 4 that address economic issues raised by Applicant's ER revision, including cost of replacement power, are discussed together.

¹ Intervenors' Contentions Regarding Applicant's Proposed Revision to Environmental Report Section 7.5S and Request for Hearing, December 22, 2009 (Co-location Contentions)

² Proposed Revision to the Environmental Report, Scott Head, U7-C-STP-NRC-090195, November 10, 2009. (ER Section 7.5S)

³ Edwin Lyman, Ph.D. is responsible for the factual content of the response addressing CL-1. See attached declaration.

CL-1A

CL-1A addresses whether the Applicant has substantiated its assumption that the duration of time between notice of general emergency and the first release of radiation is adequate to put unaffected units in stable long-term configuration. Applicant has disputed the reference that supports this contention.⁴

In Section 7.5S of the ER, the Applicant erroneously claimed that “the time increment from general emergency warning time until the first release of radioactivity to the environment for all ten accident sequences is greater than the time required to put an unaffected unit into a stable long-term decay heat removal condition.”⁵ Here the “ten accident sequences” refers to the ten severe accident sequences that are analyzed for internally initiated events for the ABWR. According to Section 7.5S, “The sum of the frequencies of occurrence for each of the ten accident sequences, which are shown in Table 7.2-1, is the core damage frequency (CDF). The CDF of an ABWR for internal events is 1.6×10^{-7} per year.”⁶ However, as was pointed out in Contention CL-1, the Applicant failed to notice that for one of these ten accident sequences, case eight, the time increment is 1.2 hours, actually less than half the three-hour period that the Applicant claims is needed to place a unit into stable shutdown without the need for further operator actions.⁷ Because of this error, the Applicant failed to evaluate the impacts from severe radiological accident scenarios on the operation of other units in the important case where operators at other units did not have adequate time to place their units in stable long-term decay heat removal conditions.

The Staff has essentially conceded the Intervenor’s point that the Applicant’s revised ER Section 7.5S contains an error.⁸ However, the Applicant denies that it actually committed an error in Section 7.5S of the ER, but its denial is technically unsound. In footnote 39 of its Answer, the Applicant asserts that ER Section 7.5S uses information from ABWR DCD Tier 2 table 19.2-16, rather than table 19.3-6.

⁴ Applicant’s Answer Opposing New and Revised Contentions Regarding Environmental Report Section 7.5S, STP, January 22, 2010 (Applicant Answer) p. 12, fn 39.

⁵ ER Section 7.5S p.4

⁶ ER Section 7.5S, p.4

⁷ This information comes from Table 19E.3-6 of the ABWR DCD Tier 2, Rev 1.

⁸ NRC Staff’s Answer to the Intervenor’s Amended and New Accident Contentions, January 22, 2010 (Staff Answer) p. 13

However, a simple comparison of the data in Table 19.E-6 with the information provided in Section 7.5S clearly indicates that Table 19.E-6 is indeed the basis for the 7.5S analysis. First, while Table 19.3-6 lists ten accident sequences, Table 19.2-16 lists fourteen. Second, it is obvious from a comparison of Tables 19.2-16 and 19.3-6 that the latter table does not contain a complete list of all severe accident sequences that contribute to the internal events CDF, and in particular those accident sequences (such as LCHPPFEH) that are included in case eight do not appear in table 19.2-16. However, Table 19.3-6 does contain a complete list of all internal events that contribute to the internal events CDF, as can be seen by comparing Table 19.3-6 to Table 7.2-1 of the Environmental Report, which according to ER Section 7.5S provides the frequencies of occurrence of the ten accident sequences that contribute to the internal events CDF. So the Applicant's attempt to save face by denying its error simply does not hold up to scrutiny. However, even if Table 19.2-16 were the source of the Applicant's data, we note that the shortest release time given there is three hours, which is identical to the safe-shutdown time. It would seem, given the uncertainties inherent in these numbers and the absence of margin, that conservatism would warrant analyzing the case where safe shutdown could not be completed in time (e.g. the release occurs in 2 hours 50 minutes and safe shutdown takes 3 hours 10 minutes to complete).

The Staff argues that the error is not material because the Applicant showed that even if all four reactors experienced simultaneous severe accidents, the cumulative environmental risk would be small, so that correcting the error would not make a difference to the outcome of the licensing proceeding.⁹ The Applicant also argues that consideration of the case eight accident is not material because the impact of multiple accidents is not significant.¹⁰ However, even if this were true, this view is not consistent with the position taken by the ASLB's order originally admitting Contention 21.¹¹ In that context, the argument is irrelevant that consideration of the case eight accident is not material because the impact of multiple accidents is not significant. The Board noted that the completeness of the ER is a material issue because a

⁹ Staff Answer, pp.14-15

¹⁰ Applicant Answer at pp. 12-13

¹¹ August 27, 2009 Memorandum and Order, ASLBP No. 09-885-08-COL-BD01, Docket Nos. 52-012-COL & 52-013-COL.

completed ER is necessary to issue a COL.¹² Hence, the only issue is whether Applicant's Section 7.5S is “complete” without consideration of the Case 8 accident. Now, irrespective of whether multiple meltdowns would have a significant off-site environmental impact, it is incontrovertible that the impact on the unit itself if the operators have to evacuate before being able to shut down the plant would be significant. Contention 21 said nothing about the impacts off-site, only about the impact of a severe accident at one unit “on the operation of other units.”¹³ Section 7.5S itself states that “[a]n important factor in mitigating and preventing major impacts at an unaffected unit is the warning time that an operator of that unit receives”¹⁴ So by not considering the impacts of a case eight accident, the ER would be neglecting what the Applicant itself states is “an important factor.”

The Staff suggests that to correct the error in Section 7.5S would amount to “flyspecking” environmental documents to add details or nuances.¹⁵ However, this error is no mere flyspeck in the analysis. By mistakenly asserting that none of the ten accident sequences that contribute to the internal events CDF would have a radiological impact on other plants before operators at those plants would be able to put them into a stable state, the Applicant entirely avoided having to do the analysis of what would happen if there were not sufficient time to complete the shutdown. Such an analysis would be a substantial and significant contribution to the ER. Without such an assessment, the ER is incomplete.

Moreover, the argument that it is unnecessary to correct this mistake because the consequences would be negligible even if all four units experienced simultaneous severe accidents fails on many levels.

First, it is an obvious fact that a severe accident affecting two or more units would have greater impacts than a severe accident affecting only one unit. So on the basis of consequences, one cannot claim that events that have greater consequences deserve less consideration than events that have smaller consequences. And since the Applicant has already evaluated the impacts of a severe accident at one unit in the ER, a single accident is not so “remote and speculative” that it need not be evaluated under

¹² Id, p.38

¹³ Petition to Intervene, April 21, 2009

¹⁴ ER Section 7.5S, p.2

¹⁵ Staff Answer, p. 14

NEPA.¹⁶ The question is whether multiple-unit accidents would be so improbable relative to single-unit accidents that they need not be considered under NEPA. If the accidents were independent and spontaneous, this might be the case. However, in the case under consideration here, the accidents are coupled, because a severe accident at one unit induces severe accidents at one or more other units. Such events may not be significantly less probable than the single accident initiator, because it depends on the conditional probability of a severe accident at an initially unaffected co-located unit. However, because the Applicant has not considered at all the dynamics of induced severe accidents, the ER has not estimated these conditional probabilities and hence cannot *a priori* conclude that they are “remote and speculative.”

The Applicant asserts that such induced events do not need to be considered under NEPA because of a licensing board ruling in the Calvert Cliffs combined license proceeding that “an environmental report for a new nuclear plant does not need to evaluate the impacts of external events that have a low probability of occurrence.”¹⁷ The Applicant further asserts that “The board stated that, under NEPA’s rule of reason, a probability of 10^{-6} per year is the ‘threshold above which accident scenarios must be evaluated for NEPA consideration.’”¹⁸ The Applicant then states that the Large Early Release Frequency (LERF) for STP Units 1 and 2 is about 6.1×10^{-7} per year, which is less than 10^{-6} .¹⁹

However, it is less than a factor of two below the deadline. NRC’s guidance for ER SAMA and SAMDA evaluations requires that sensitivity studies be conducted to evaluate the impact of uncertainties on CDF on the outcomes of these evaluations by considering 95th percentile values in place of mean values. Typical CDF (and hence LERF) uncertainties are typically on the order of a factor of two.²⁰ Hence the LERF for STP Units 1 and 2 is not significantly below the threshold, and in fact would likely be

¹⁶ Applicant Answer, p. 5

¹⁷ Applicant Answer, p.8

¹⁸ Id.

¹⁹ Id.

²⁰ See, e.g., The Environmental Report for the Plant Vogtle License Renewal Application. “Typical PRA uncertainty calculations identify the 95th percentile CDF as between 1.5 and 2.5 times the mean point estimate CDF values. Therefore, although a detailed uncertainty distribution is not available from the VEGP PRA model at this time, a factor of 2.0 greater than the CDF point estimate produced by the VEGP PRA is used as a reasonable approximation for the uncertainty analysis.” Vogtle ER at F-78.

above the threshold if 95th percentile values for CDF and LERF were considered. Therefore, it is unreasonable to dismiss these as “remote and speculative” events.

Applicant maintains co-location impacts, including those under case eight, are all too remote and speculative to warrant contention status.²¹ In support Applicant relies on the quantitative risk analysis that posits the low probability of an accident at one unit having adverse consequences at another unit.²² But this basis is not determinative. It is not only the statistical improbability of a serious accident that bears on the determination whether, in a given circumstance, a severe accident should be anticipated and thereby considered in the context of the COLA. In the case of *In the Matter of Philadelphia Electric Company* (Limerick Generating Station, Units 1 and 2) 22 N.R.C. 681(1985) the issue was whether the improbability of evacuation a nuclear plant justified allowing backup medical facilities to be located forty-five minutes from the nuclear plant. In reversing the Board’s decision that was premised on the low probability of circumstances that would ever require the need to use backup medical facilities the Atomic Safety and Licensing Appeal Board stated:

...the improbability of PMMC's evacuation and consequent unavailability to receive contaminated injured workers is beside the point. The Commission's emergency planning regulations are premised on the assumption that a serious accident might occur and that evacuation of the EPZ might well be necessary. The adequacy of a given emergency plan therefore must be adjudged with this underlying assumption in mind. As a corollary, a possible deficiency in an emergency plan cannot properly be disregarded because of the low probability that action pursuant to the plan will ever be necessary. Thus, the Licensing Board majority gave undue weight to the fact that evacuation of PMMC is remote.²³

Similar reasoning applies here. Notwithstanding the low probability that the effects of a severe accident at one unit would adversely impact a co-located unit, Applicant has on-site emergency response capabilities, separation distances between units and independent safety systems. The Applicant has made design decisions and preparations for severe accidents that it claims are so remote and speculative that there is actually no need to anticipate such in the context of severe co-location accident effects. However, evidently, the accidents are not so remote and speculative to obviate the need to account for such in

²¹ Applicant Answer, pp. 5-11

²² Id. at p.8

²³ *In the Matter of Philadelphia Electric Company* (Limerick Generating Station, Units 1 and 2) 22 N.R.C. 681(1985) at 713 (internal cite omitted).

design and accident mitigation responses. As pointed out by the ASLB in *In the Matter of Philadelphia Electric Company* (Limerick Generating Station, Units 1 and 2) emergency planning assumes that a serious accident might occur.²⁴

Regulatory assumptions about probability of severe accidents have been altered since the attacks of September 11, 2001. The requirements of 10 C.F.R. § 50.150 (aircraft design impact) and 10 C.F.R. § 50.54(hh) (mitigation of loss of large areas of plant due to fires/explosions) are recognitions that the risk profile has changed. The probabilities that on any given day a nuclear plant will be struck by a large commercial aircraft are low; but that statistical consideration did not deter the Commission from adopting the new regulatory requirements intended to address risks once thought too remote and speculative to justify consideration of design changes and the requirement of more robust mitigation strategies. The logic is the same for co-location accident analysis.

In *Limerick Ecology Action v. N.R.C.*, 869 F 2d 719 (3rd Cir. 1989) the court confronted a similar problem in the context of whether the location of a nuclear plant in a densely populated area allowed adoption of generic risk factors and a SAMDA decision supported by a policy statement rather than a rulemaking.²⁵ The court rejected the NRC's argument that its policy statement addressing SAMDAs satisfied NEPA. The court noted that “(1) after Three Mile Island, it would be irrational for the NRC to maintain that severe accident risks are too remote to require consideration; (2) the NRC itself has devoted \$50 million to studying such risks, not to mention the expenditures for evacuation plans; and (3) the NRC's own interpretation of its NEPA requirements requires consideration of such risks.”²⁶ The Staff acknowledges the error in case eight but is dismissive of it because it does not raise a dispute under 10 C.F.R. 2.309(f)(1)(iv).²⁷ The Staff's argument is internally contradictory. On the one hand, the DCD is held up as an unassailable analysis that resolves all questions in Applicant's favor. But when a material

²⁴ *In the Matter of Philadelphia Electric Company* (Limerick Generating Station, Units 1 and 2) 22 N.R.C. at 713

²⁵ *Limerick Ecology Action v. N.R.C.*, 869 F 2d 719 (3rd Cir. 1989) at 739

²⁶ *Id.* at 740

²⁷ Staff Answer, p. 13.

error about release times is called out, the flawed DCD becomes a *de minimis* consideration.²⁸ Staff does not hint at what technique of analysis it applies to determine which DCD errors might make a difference in the licensing decision. But an accident scenario that precludes safe shutdown of an undamaged plant before a radiation release from an accident-affected co-located plant occurs is a reasonable basis to consider whether a license should issue.

CL-1B

CL-1B is based on the premise that during shutdown a nuclear plant is more vulnerable. The Applicant and Staff argue that the information related to the shutdown risks has been previously available and that the contention should be rejected under 10 C.F.R. 2.309(c) and (f)(2).²⁹ However, accident impacts on co-located plants were not considered by the Applicant prior to Contention 21. Moreover, while there is a rulemaking that certified the ABWR there is no indication that the rulemaking considered impacts related to co-location accidents. And this omission was the basis for the admission of Contention 21. Accordingly, contentions that raise issues based on this omission should be considered timely even if the relevant information had been previously available. This Panel has the discretion to accept nontimely contentions under section 2.309(c)(1) upon a showing of “good cause” for failure to file such in a timely manner and a weighing of a number of factors.³⁰ When new contentions are based on “breaking developments of information, they are to be treated as ‘new or amended,’ not as ‘nontimely.’”³¹ Here, the submittal of Applicant’s ER revisions is new information upon which the contention is based and should, therefore be considered timely.

The Applicant’s neglect of consideration of shutdown events is of particular significance with regard to the co-location impacts, because the Applicant emphasizes so strongly the role of accidents involving both core damage and a large release of radioactivity in considering co-location impacts and

²⁸ Staff Answer, p. 15

²⁹ Applicant Answer, p. 13, Staff Answer, p.16.

³⁰ 10 C.F.R. §2.309(c)(1)(ii)-(viii)

³¹ *Shaw Areva Mox Services* (Mixed Oxide Fuel Fabrication Facility). LBP-07-14. 66 NRC 169, 210 n.95 (2007)

emphasizes the low probability of such events.³² However, the risk of an accident with both core damage and large release of radioactivity is significantly greater for shutdown events, as pointed out in the original contention. In fact, the LERF is typically equated with the CDF for shutdown events. Therefore, the omission of shutdown events in the Applicant's PRA is clearly material with regard to the likelihood that a severe accident will have a serious impact on a co-located unit, whereas it may not be clearly material with regard to off-site environmental impacts.

The Applicant argues that this contention is an attack on the ABWR design certification.³³ But this argument overlooks the fact that co-location accident impacts were not considered in the design certification rule. Had they been considered, there would have been no basis for the admission of Contention 21 as an omission contention.

Applicant also argues that Section 7.5S.5 and 7.5S.6 considered cost impacts and dose risks "from an accident in one of the ABWRs" and such could increase impacts and risks "by one to two orders of magnitude" and not affect the ER's conclusions.³⁴ And Applicant asserts that "even if the risk of accidents at the ABWR were conservatively increased by a factor of ten to account for accidents during shutdown and low-power conditions" the conclusions in the ER would not be affected.³⁵ This assertion is not a substitute for an analysis to support it.³⁶ Applicant has not considered increased impacts and risks from contemporaneous accidents that occur at two or more units; and, if considered, multiple unit accidents in close temporal proximity may affect its conclusions.

Finally, Applicant submits that CL-1B is based only on the RAI 19-3.³⁷ In addition to the RAI the contention is supported by the opinion of Dr. Lyman, NUREG 1449, and NUREG 1503.³⁸

³² Applicant Answer, p.8

³³ Applicant Answer, p. 14

³⁴ Applicant Answer, p. 15 (emphasis added)

³⁵ Applicant Answer, p.15.

³⁶ *Limerick Ecology Action*. 869 F.2d 719, 739 (Argument by counsel cannot take the place of an agency's statement of reasons or findings).

³⁷ Applicant Answer, p. 15, fn.47

³⁸ Co-location Contentions, pp.5-6

Staff cites *AmerGen Energy Co., LLC (Oyster Creek Nuclear Generating Station)* 64 N.R.C. 229 (2006) as support for its argument that an applicant's commitment to perform certain testing (the absence of which formed an omission contention) rendered a contention moot.³⁹ This case is distinguishable because while in *Oyster Creek* the acceptance criteria remained the same and could have formed the basis of a contention that could have been filed earlier in this case there is no similar extant criteria to judge effects related to co-location accidents.

This analysis is not "flyspecking" the ER revisions. The vulnerabilities of nuclear plants during shutdown are understood as discussed in NUREG 1449 and this recognition should be fully considered in the ER. Further, in light of the changed threat environment post-September 11, 2001, and the Commission's adoption of 10 C.F.R. § 50.150 and § 50.54(hh), evaluation of multiple and varied accident scenarios, including during shutdown and low power operation, is not unreasonable in the context of co-located units.

CL-1C

CL-1C alleges common-cause failures from external events have the potential to extend the time needed to achieve safe shut down.⁴⁰

The Applicant contends that external events were considered and deemed insignificant contributors to core damage frequencies.⁴¹ However, in the context of this co-location contention the key parameter is the duration of time required for safe shutdown and whether it is extended due to external events. The Applicant relies on, *inter alia*, the case eight accident scenario that was discussed *supra*. Section 7.5S.6 depends on the validity of the underlying accident scenarios, including case eight, but case eight does not support the conclusion that delays in safe shut down are unimportant. In further support of this contention Intervenors incorporate by reference the arguments and authorities herein related to CL-1A.

³⁹ Staff Answer, p. 17

⁴⁰ Co-location Contentions, p. 6.

⁴¹ Applicant Answer, p. 16

CL-1D

CL-1D alleges that chain-reaction accidents at co-located units that cause multiple units to experience severe accidents have not been addressed in the ER revisions. The Applicant contends there is no basis to perform a SAMDA analysis that assumes simultaneous accidents at all four units.⁴² The Applicant again relies on the flawed underlying analysis of Section 7.5S.6 . Accordingly, Intervenor incorporate by reference the arguments and authorities herein related to CL-1A.

CL-2, CL-3, CL-4

Intervenor argued in CL-2 that the “[t]he Applicant’s quantification of the probable replacement power costs in the event of a forced shutdown of nuclear units on the STP site is inadequate and understates the replacement power costs which would be incurred.”⁴³ CL-3 states that the Applicant’s quantification of the replacement power costs “is inadequate in that it does not take into account the increase of ERCOT market prices due to the market effects of a STP outage.”⁴⁴

The Intervenor argue in CL-4 that

The Applicant’s Environmental Report is inadequate in that it does not evaluate or take into account the impacts on ERCOT consumers and the disruptive impacts of potential price spikes and grid outages, which could be triggered by the simultaneous shutdown of all four units at STP.⁴⁵

The Applicant and Staff fail to recognize that beyond the specific baseline replacement power costs Johnson’s analysis provided, CL-2, CL-3, and CL-4 are contentions of omission.⁴⁶ The Applicant has omitted consideration of the factors unique to the deregulated ERCOT market that would raise the

⁴² Applicant Answer, p. 18

⁴³ Co-location Contentions, p.7

⁴⁴ Co-location Contentions, p.8

⁴⁵ Co-location Contentions, p.9

⁴⁶ Co-location Contentions, p.2

costs above both the Applicant and Johnson's replacement power costs with disruptive impacts on consumers.

The Intervenor has demonstrated that the Applicant has seriously understated replacement costs. Intervenor has raised sufficient doubt on the adequacy of the Applicant's replacement costs and have shown that the Applicant's assertion that a SAMDA would not be cost-effective is unsubstantiated. As omission contentions the Intervenor's burden is only to specify the facts necessary to establish that the applicant has omitted information that should have been included. It is not necessary to show that the facility cannot be safely operated, but rather that the application is incomplete.⁴⁷

The Applicant argues that CL-2 and CL-3 are untimely, because the Applicant used the same approach for replacement costs in ER Section 7.3.⁴⁸ CL-2, CL-3, and CL-4 are questioning and criticizing the adequacy of the replacement costs used in the SAMDA analysis in the ER Amendment, not the SAMDA analysis itself, and should therefore be considered timely. Moreover, in ER Section 7.3 there is no mention of the "typical short-term replacement power cost" utilized by the Applicant in the ER Amendment.⁴⁹ The Applicant actually states that this short-term value, "scaled to STP power levels, replaced the present value in the replacement power cost calculation of Section 7.3 for this analysis."⁵⁰ These contentions are timely because a new replacement power cost value has been used to replace the significantly greater present value replacement cost used in ER Section 7.3.⁵¹

Both the Applicant and the Staff state that the contentions fail to demonstrate a genuine, material dispute with the Applicant.⁵² Applicant and Staff allege that the Intervenor is attempting to "flyspeck" the ER by addressing "nuances" which are not material.⁵³ Staff argues that the Intervenor "take issue

⁴⁷ *In the Matter of Virginia Electric and Power Company (North Anna Power Station, Unit 3)*, 68 N.R.C. 294, 317 (2008).

⁴⁸ Applicant Answer, p.20, 22

⁴⁹ ER Section 7.5S.5, p.7

⁵⁰ Id.

⁵¹ Replacement power costs are only mentioned once in ER Section 7.3 in Table 7.3-1

⁵² Applicant Answer, pp.19, 21, 22, 24 and Staff Answer, pp.23, 26, 28

⁵³ Applicant Answer, pp.21, 24 and Staff Answer, p.24

with one component of the cost-risk.”⁵⁴ Intervenors contend that the contentions raise sufficient doubt that a replacement costs forecast, which took into consideration the characteristics of the ERCOT market, could raise the overall monetized impacts to a point in which a SAMDA is cost-effective.

The Applicant and Staff fail to appreciate the main point of the Johnson Report and acknowledge the genuine and material dispute that the replacement power costs put forth by the Applicant are unrealistic and understated. The Applicant's fundamental approach to estimating replacement power costs is defective because it is not based upon the market in which STP operates. The basic approach undertaken by the Applicant is consistent with analyzing the impact of replacement power for a regulated integrated electric utility. Under that approach the replacement power cost paid by the owner of STP is approximately the same as the impact imposed on the public/consumers, because the owner-utility is a monopoly which serves all of those customers through cost of service tariffs. However, STP is not owned by a monopoly utility, but instead operates in a deregulated ERCOT market. The replacement power cost incurred by NRG, the principal owner of STP, is not indicative of the cost impact imposed on the consumers/public in the region, because NRG doesn't serve those customers directly and power prices paid by consumers are not based on cost of service tariffs. Instead the impact of a STP shutdown on the consuming public in the region arises from the increases in overall market prices within ERCOT. The loss of STP power will change the marginal units bidding into the hourly markets, thereby increasing the price in every hour.

This process detailed in the Johnson Report is not speculative as the Applicant contends; it is an accurate description of how the ERCOT market is designed to operate. The Applicant's estimate of replacement power is understated and unrealistic, because the approach completely ignores the actual economic process for electric pricing within ERCOT and the basic framework in which STP cost impacts flow to the consuming public.

The Applicant argues that “there still would be no SAMDA that would be cost-effective,” even if the replacement cost values “were multiplied by a factor of four as suggested by the Intervenors.”⁵⁵ Both

⁵⁴ Staff Answer, p.24

the Johnson Report and the Intervenor's contentions were clear that the baseline costs forecasted by Johnson were "below likely replacement costs which would be incurred"⁵⁶ and that the removal of STP generation will increase the forecasted ERCOT market prices, for the reasons stated above and in the Johnson Report.⁵⁷

The Applicant and Staff criticize the Intervenor's for not demonstrating that a STP shutdown could change replacement power costs or cause economic dislocation due to price spikes and characterize the contentions as speculative.⁵⁸ The Applicant and Staff also criticize Johnson and the Intervenor's for making "generalized statements"⁵⁹ in "vague terms,"⁶⁰ because specific dollar values of projected increases were not calculated.⁶¹ Yet the Johnson Report demonstrates that the STP capacity will represent a large proportion of available baseload capacity which will be sufficient to trigger conditions within ERCOT that historically produce price spikes.⁶² The Applicant has however failed to even recognize this issue, and the Intervenor's have provided sufficient information pointing to a significant omission.

The Applicant and Staff take Johnson's use of the word "extreme" and the phrase "the probability may not be high" out of context in the discussion regarding blackout/load shedding discussion.⁶³ The extreme events specifically referenced catastrophic events like the \$45 billion of damages in California and \$10 billion of damages in the Northeast blackout.⁶⁴ Certainly those are low probability events, but the economic consequences are very high. However, other higher probability load shedding events can occur

⁵⁵ Applicant Answer, p.21

⁵⁶ Johnson Report, p.2 cited in Co-location Contentions, p.8

⁵⁷ There is the dual effect of increasing replacement power costs (above the 3 - 3.8 increase) for the owners of STP and increasing the market prices for all consumers of power within ERCOT. Thus, the actual understatement of replacement power costs is greater than 3 - 3.8 times the Applicant's per day costs.

⁵⁸ Applicant Answer, p.23 and Staff Answer, p.29

⁵⁹ Applicant Answer, p.23

⁶⁰ Staff Answer, p.29

⁶¹ Similarly, The Staff criticizes the Johnson report for failing to produce more than sensitivity examples of the possible impact on consumers. p.28 Yet the Staff does not question and accepts an unrealistic Applicant estimate for replacement power costs, which completely ignores the actual economic process for electric pricing within ERCOT.

⁶² Johnson Report, p.6 "The loss of all four STP units simultaneously would represent 43% of the total baseload capacity...in the North and South zones...The lost STP capacity would represent 19% of total ERCOT baseload capacity."

⁶³ Applicant Answer, p.25 and Staff Answer, p.29

⁶⁴ Johnson Report, p.7

with less extreme damage outcomes. The Applicant has purported to quantify the risk, but ignores all of these events.

In response to Intervenor's contention CL-4, the Applicant states, "Under NEPA, a NRC applicant is not required to evaluate the economic impacts on consumers."⁶⁵ However, in *Friends of the Boundary Waters Wilderness v. Dombeck*, 164 F.3d 1115, 1125-26 (8th Cir.1999) the court found that plaintiffs had standing in a case against the Forest Service for improperly restricting visitor and motorboat use in a federal wilderness area. In finding that the plaintiffs had standing under NEPA the court cited 40 C.F.R. 1508.14 that includes economic considerations: "When an environmental impact statement is prepared and economic or social and natural or physical environmental effects are interrelated, then the environmental impact statement will discuss all of these effects on the human environment." There are clear economic considerations linked to the Applicant's replacement power costs that include impact on SAMDA. To the extent Applicant has understated replacement power costs its SAMDA analysis is flawed.

Conclusion

For the above reasons, Intervenor's urge that contentions CL-1 – CL-4 be admitted for adjudication.

Respectfully submitted,

/s/ Robert V. Eye
Robert V. Eye, Kan. Sup. Ct. No.10689
Kauffman & Eye
Suite 202
112 SW6th Ave.
Topeka, Kansas 66603
785-234-4040
bob@kauffmaneye.com

January 29, 2010

⁶⁵ Applicant Answer, pp.24-25

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CERTIFICATE OF SERVICE

I hereby certify that on January 29, 2010 a copy of “Intervenors’ Consolidated Response to NRC Staff’s Answer to the Intervenors’ New Accident Contentions and Applicant’s Answer Opposing New Contentions Regarding Applicant’s Environmental Report Section 7.5S” was served by the Electronic Information Exchange on the following recipients:

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

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

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

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

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

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

Steven P. Frantz
Stephen J. Burdick
Alvin Gutterman
John E. Matthews
Counsel for STP Nuclear Operating Company
Morgan, Lewis & Bockius LLP
1111 Pennsylvania Avenue, N.W.
Washington, D.C. 20004
Phone: 202-739-3000
Fax: 202-739-3001
E-mail: sfrantz@morganlewis.com
sburdick@morganlewis.com
agutterman@morganlewis.com
jmatthews@morganlewis.com

Signed (electronically) by Robert V. Eye
Robert V. Eye
Counsel for the Intervenors
Kauffman & Eye
112 SW 6th Ave., Suite 202
Topeka, KS 66603
E-mail: bob@kauffmaneye.com