

~~CONTAINS SENSITIVE UNCLASSIFIED NON-SAFEGUARDS INFORMATION  
WITHHOLD PER 10 C.F.R. § 2.390 AND JULY 1, 2009 PROTECTIVE ORDER~~

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' Contentions Regarding Applicant's Submittal  
Under 10 C.F.R. § 52.80 and 10 C.F.R. § 50.54(hh)(2) and Request for Subpart G Hearing

Introduction

Pursuant to the Board's Order of July 1, 2009 the Intervenors hereby present their contentions regarding the Applicant's submittal of May 26, 2009 that purports to bring the COL application into compliance with 10 C.F.R. § 50.54(hh)(2). The Intervenors' contentions herein regarding the submittal are based, for the most part, on the failure of the Applicant to discuss the full spectrum of damage states to which the mitigation strategies are to apply. The failure to discuss the full spectrum of damage states does not allow an analysis of the adequacy of the mitigation strategies outlined in the submittal.

Therefore, the efficacy of any particular mitigation strategy that is affected by either the size or number of fires/explosions caused by the initiating event(s) is unknown based on the information in the submittal.

Information in this record was deleted  
in accordance with the Freedom of Information  
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The Intervenors' original Contention Two was one of omission that argued the COL application was deficient because it failed to address mitigative measures related to fires and explosions that cause a large loss of plant.<sup>1</sup> Petitioners' Contentions, pp.13-23. The Applicant's response was to develop the Mitigative Strategies Report (the May 26, 2009 submittal) that relies primarily on the guidance in NEI 06-12. However, NEI 06-12 concedes that it makes no attempt to predict the number or magnitudes of fires and explosions from an initiating event(s) or the full spectrum of damage that result therefrom. Neither does it make any quantitative or qualitative descriptions of the scale of events for which mitigative responses would be required. NEI 06-12, p.1.

Additionally, the submittal leaves for future actions significant tasks related to the mitigative measures. Many of these incomplete items are directly related to the capacity of the Applicant to adequately respond to large explosion/fire events. Moreover, the incomplete items frequently refer to "event(s)" with no specification of the full spectrum of damage states to which the mitigative strategies apply.

Accordingly, the submittal in question is an inadequate means to determine whether the mitigative measures specified therein are adequate.

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<sup>1</sup> Contention Two has been the subject of briefings concerning whether it was rendered moot as a result of the presentation of the Applicant's May 26, 2009 submittal to the NRC. The Intervenors incorporate by reference the arguments and authorities cited in their mootness pleadings as such apply to the omission of discussions in the submittal regarding the full spectrum of damage states that the mitigative strategies are intended to address. However, nothing herein should be construed as a waiver of any prior Intervenor mootness argument.

Summary of Contentions

1. The submittal is deficient because it omits any reference to the numbers and magnitudes of the fires and explosions that would be expected, for example, from the impact of a large commercial airliner(s). Without such reference there is an inadequate basis to determine whether the proposed mitigative strategies are adequate to comply with 10 C.F.R. § 50.54(hh)(2).

Compliance with 10 C.F.R. § 50.54(hh)(2) cannot be determined without a determination of the full spectrum of damage states. At a minimum, the Applicant should be required to describe damage footprints both quantitatively and qualitatively, including composite damage footprints, that are reasonably expected with an airstrike(s) and include descriptions of anticipated physical damage, shock damage, fire damage, fire spread, radiation exposures to emergency responders and the public and other effects such as failure of structural steel. See draft regulatory guidance for the aircraft impact design regulation, 10 C.F.R. § 50.150, NEI 07-13, pp. 32-36. **p.5**

2. According to the submittal, Phase 1 mitigative strategies are dependent on yet to be completed assessments, evaluations, action plans, and procedures that will not be completed until near the end of construction. Submittal, p.3 The submittal does not specify that the subject assessments, evaluations, etc. will be done based on the full spectrum of damage states. The assessments, evaluations, etc. will evidently determine the scope of the Phase 1 fire fighting strategy and therefore must be done with the full spectrum of damage states in order to determine whether the proposed fire suppression strategies are adequate. **p.14**

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SOUTH TENDS

However, there is no quantitative or qualitative description of the "event" nor is there a stated commitment to evaluate the dose projection models considering the full spectrum of damage states. **p.15**

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However, the MST does not specify whether the LOLA "event" commitments/strategies are or will be developed based on a damage footprint of sufficient extent and severity to accommodate the likely impact(s) of large commercial airliner(s) and/or the full spectrum of damage states. Accordingly, there is no way to determine whether the proposed mitigative strategies are adequate. **p.16**

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Accordingly, the submittal should reconcile the premise that no heroic actions will be required with the recognition that the mitigative measures may be unsuccessful, considering the full spectrum of damage states, and that heroic actions would in fact be required to actually mitigate the effects of fires and explosions that are not controlled by use of the Applicant's mitigative measures. **p.18**

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6. The South Texas Project 3&4 Mitigative Strategies Report is deficient because it does not address strategies suitable for the particular circumstances associated with LOLAs occurring during reactor outages. Therefore, it does not comply with the requirements of 10 C.F.R. §50.54(hh)(2), which applies both during full-power operation and during outages. **p.19**

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However, there is no discussion of the number or magnitude of fires that would require water nor the full spectrum of damage states that would require fire suppression and cooling functions. There is no evidentiary support for an assumption by the Applicant that adequate supplies or pumping capacity is available simultaneously for emergency reactor cooling, SFP cooling and suppressing multiple fires. **p.21**

**Contentions**

**1. The submittal is deficient because it omits any reference to the numbers and magnitudes of the fires and explosions that would be expected, for example, from the impact of a large commercial airliner(s). Without such reference there is an inadequate basis to determine whether the proposed mitigative strategies are adequate to comply with 10 C.F.R. § 50.54(hh)(2). Compliance with 10 C.F.R. § 50.54(hh)(2) cannot be determined without a determination of the full spectrum of damage states. At a minimum, the Applicant should be required to describe damage footprints both quantitatively and qualitatively, including composite damage footprints, that are reasonably expected with an airstrike(s) and include descriptions of anticipated physical damage, shock damage, fire damage, fire spread, radiation exposures to emergency responders and the public and other effects such as**

**failure of structural steel. See draft regulatory guidance for the aircraft impact design regulation, 10 C.F.R. § 50.150, NEI 07-13, pp. 32-36.**

***A. Legal basis for contentions of omission***

10 C.F.R. § 2.309(f)(1)(v) requires the Intervenors to provide a concise statement of the facts that support their positions and upon which they intend to rely at the hearing. However, the requirements of 10 C.F.R. § 2.309(f)(1)(v), that generally call for a specification of facts or expert opinion supporting the issue raised, are not applicable to a contention of omission beyond identifying the omitted information required under the regulation in question. North Anna, LBP-08-15, 68 NRC (slip op. at 27) (quoting Pa'ina Hawaii, LLC (Materials License Application), LBP-06-12, 63 NRC 403, 414 (2006)). Thus, for a contention of omission, the Intervenors' burden is only to show the facts necessary to establish that the application omits information that should have been included. The facts relied on need not show that the facility cannot be safely operated, but rather that the application is incomplete. Catawba Nuclear Station, Units 1 and 2, CLI-02-28, 56 NRC 373, 383 (2002).

***B. The submittal is deficient because it fails to discuss the full spectrum of damage states consistent with the loss of large areas of the plant due to explosions or fire and fails to provide analysis demonstrating that given the full spectrum of damage states, the proposed mitigative measures are sufficient to comply with 10 C.F.R. § 50.54(hh)(2).***

10 C.F.R. § 52.80(d) mandates that the subject COL application include the means to meet the requirements of 10 C.F.R. § 50.54(hh)(2).<sup>2</sup> This regulation on its face requires that the

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<sup>2</sup> 10 C.F.R. 50.54(hh)(2) requires as follows: "Each licensee shall develop and implement guidance and strategies intended to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities under the

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Applicant consider that there will be a loss of large areas of the plant due to fires/explosions (LOLA events). The regulation does not specify the numbers and magnitudes of the fires and explosions that the Applicant is to consider. However, the Federal Register notice that announced the final adoption of 10 C.F.R. § 50.54(hh)(2) does require that the mitigative strategies response procedures consider aircraft attacks as a baseline<sup>3</sup> for determining the scale of fires/explosions that would be assumed to occur and therefore addressed by the requirements of 10 C.F.R. § 50.54(hh) (2).<sup>4</sup> Intervenors understand that initiating events are not necessarily limited to a single aircraft attack and recognize such could include multiple aircraft attacks in close temporal proximity with a coordinated ground attack intended to further compromise reactor containment, core cooling and/or spent fuel pool cooling and/or to disrupt efforts to suppress fires and initiate other mitigative measures. But such a recognition is not discussed in the submittal and its absence makes effective evaluation of the efficacy of the mitigative strategies impossible. (b)(4)

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circumstances associated with loss of large areas of the plant due to explosions or fire, to include strategies in the following areas: (i) Fire fighting; (ii) Operations to mitigate fuel damage; and (iii) Actions to minimize radiological release.”

<sup>3</sup> “Licensees are required to develop procedures to facilitate the rapid entry of appropriate onsite personnel as well as offsite responders into their protected areas to deal with the consequences of an aircraft impact.” (74 Fed. Reg. 13957)

“Because the most well-considered plans and procedures do not guarantee that critical on-shift personnel will survive an aircraft impact, the rule requires licensees to develop, implement, and maintain procedures for an effective recall process for appropriate off-shift personnel.” (74 Fed. Reg. 13957)

“The mitigative strategies employed by new reactors as required by this rule would also need to account for, as appropriate, the specific features of the plant design, or any design changes made as a result of an aircraft assessment that would be performed in accordance with the proposed Aircraft Impact Assessment rule (72 FR 56287; October 3, 2007).” (74 Fed. Reg. 13957)

“As discussed previously, the Commission has proposed in a separate rulemaking to require designers of new nuclear power plants (e.g., applicants for standard design certification under part 52, and applicants for combined licenses under part 52) to conduct an assessment of the effects of the impact of a large commercial aircraft on a nuclear power plant.” (74 Fed. Reg. 13957)

“Section 50.54(hh)(2) focuses on ensuring that the nuclear power plant’s licensees will be able to implement effective mitigative measures for large fires and explosions including (but not explicitly limited to) those caused by the impacts of large commercial aircraft. (74 Fed. Reg. 13957)

<sup>4</sup> “*Mitigative Strategies and Response Procedures for Potential or Actual Aircraft Attacks*. These requirements appear in new § 50.54(hh). Section 50.54(hh)(1) establishes the necessary regulatory framework to facilitate consistent application of Commission requirements for preparatory actions to be taken in the event of a potential or actual aircraft attack and mitigation strategies for loss of large areas due to fire and explosions.” 74 Fed. Reg. 13927-13928.

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submittal does not discuss such combinations of failures and to the extent broad spatial impacts are anticipated there is no attempt to describe such in either quantitative or descriptive terms.

The Applicant's submittal primarily relies on the guidance document NEI 06-12, B.5.b Phase 2 and 3 Submittal Guideline, Rev. 2. (Applicant's submittal cover letter dated May 22, 2009, Mitigative Strategies Report, p.2)

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The Intervenor's contend that the failure of the Applicant to discuss the scale (i.e. numbers and magnitudes) of the fires and explosions anticipated from an initiating event(s) renders its

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submittal inadequate to meet the requirements of 10 C.F.R. § 52.80(d) and 10 C.F.R. § 50.54(hh). The NEI 06-12 guidance concedes that it does not consider the scale of any potential fire or explosion and instead adopts a “flexible response” for meeting undefined and unquantified “extreme conditions” *Id.* Accordingly, there is no way to determine whether the proposed mitigative strategies are actually adequate to address the numbers and magnitudes of fires and explosions that could reasonably be expected from, for example, the impact(s) of a large commercial airliner(s) into a nuclear power plant(s).<sup>6</sup>

The supplementary information in 74 Fed. Reg. 13926 regarding 10 C.F.R. § 50.54(hh)(2) clearly anticipates that the fire and explosions that the regulatory requirements envision would be of the magnitude that would result from the impact of a large commercial airliner. (see footnote 3). Nevertheless, the Applicant has chosen to rely upon the NEI 06-12 that makes no statements about the numbers or magnitudes of the fires or explosions that are considered. Therefore, there is no meaningful way to determine whether the mitigative strategies in the Applicant’s submittal are adequate to deal with fires and explosions that would be caused by the impact of a large commercial airliner(s) or other initiating event(s).

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<sup>6</sup> The initiating events, irrespective of cause, are considered beyond-the-design-basis for new nuclear plants. Mitigative Strategies Report, p. 1. Beyond-design-basis “is used as a technical way to discuss accident sequences that are possible but were not fully considered in the design process because they were judged to be too unlikely. As the regulatory process strives to be as thorough as possible, “beyond design-basis” accident sequences are analyzed to fully understand the capability of a design.” NRC Glossary. However, whether certain initiating events are within the original design basis is rendered irrelevant for purposes of application of 10 C.F.R. § 50.54(hh)(2). The regulatory objective now is to determine whether the mitigative response strategies are adequate notwithstanding that nuclear power plants have not been designed to withstand such impacts and the effects therefrom were not considered in the original designs.

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What is the "full spectrum of potential damage states" to which the guidance refers? If the "full spectrum of potential damage states" is known sufficiently to conclude that identified response capabilities may be inadequate, why is this undefined/undescribed spectrum not utilized to accurately predict the nature and extent of damage that could be expected from the impact of a large commercial airliner(s) or similar initiating events?<sup>7</sup>

Large commercial airliners are known quantities. For example, the fuel capacity of airliners is quantifiable as well as the amount of fuel that would be consumed from takeoff from various originating airports to impact into South Texas Project Units 3 and 4. Additionally, the physics of an impact would presumably also be quantifiable. Based on these quantifiable variables the Intervenors contend that the nature and extent of the damage that reasonably could be expected from the fires and explosions resulting from the impact of a large commercial airliner are known sufficiently to tailor a response strategy appropriate thereto. The submittal

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may be adequate for its stated purpose but there is no way to determine such without a defined description of the event(s) to which the subject mitigative strategies apply.

Descriptions of the effects of aircraft impacts into nuclear plants have been made in other contexts.<sup>8</sup> For example, NEI 07-13 is the draft regulatory guidance for the aircraft impact design regulation, 10 C.F.R. § 50.150. This guidance document specifically differentiates between the requirements of 10 C.F.R. § 50.150 and the requirements of 10 C.F.R. § 50.54(hh). The guidance document for 10 C.F.R. § 50.150 states:

Given the number of variables in performing the required assessments, there is a range of uncertainty in the results obtained from the application of this guideline. There is obviously also an uncertainty associated with the characteristics of the aircraft impact itself. For these reasons, the methodologies described in this document are intended to provide "best estimate" results, consistent with the requirements of the final rule (10 C.F.R. 50.150) to use realistic analyses. Treatment of uncertainties (hot shorts, spurious actuations, actual fire spread, shock effects, and estimated physical damage footprint) would overly complicate the assessments and are best addressed through 10 C.F.R. 50.54 (h)(h) [sic] which requires all new plants to develop mitigation strategies to address loss of large areas of the plant due to fire or explosion from any cause.

NEI 07-13, Rev. 7, May 2009 (public version), pp. 2-3 (emphasis added)

However, the Applicant's submittal at issue covers none of the uncertainties, such as the "hot shorts, spurious actuations, actual fire spread, shock effects and estimated physical damage footprint," that NEI 07-13 anticipates will be done as a function of compliance with 10 C.F.R. § 50.54(hh)(2).

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<sup>8</sup> "Since September 11, 2001, the Commission has used state-of-the art technology to assess the effects of aircraft impacts on nuclear power plants. As part of a comprehensive review of security for NRC-licensed facilities, the NRC conducted detailed, site-specific engineering studies of a limited number of nuclear power plants to assess potential vulnerabilities of deliberate attacks involving large, commercial aircraft. In conducting these studies, the NRC consulted national experts from several Department of Energy laboratories using state-of-the-art structural and fire analyses. The agency also used realistic predictions of accident progression and radiological consequences." 74 Fed. Reg 28119. (Emphasis added)

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However, NEI 07-13 describes some of the anticipated effects of an aircraft impact including damage footprint assessments. NEI 07-13, pp.29-36. The significance of these descriptions as related to the subject submittal includes the anticipated efficacy of Phase 1 fire suppression efforts when there are multiple fires, major structural damage, station blackout, breach of containment integrity, loss of core cooling capacity and the loss of/compromised spent fuel pool cooling that could occur simultaneously. Such a scenario is not unrealistic under the damage footprint descriptions in NEI 07-13. *Id.* However, the submittal makes no projections as to the number or magnitude of explosions that could impair core cooling, containment or spent fuel pool cooling. Also, the submittal makes no projections as to the number or severity of fires that may have to be suppressed simultaneously in order to restore or maintain containment integrity, core cooling spent fuel pool integrity/cooling.. This renders impossible the ability to make any conclusion regarding the adequacy of the response measures required under 10 C.F.R. § 50.54(hh).

The Applicant has provided a statement of mitigative measures without any attempt to determine whether such are adequate for the regulatory requirement of addressing fires and explosions that would result from the impact of a large commercial airliner. Thus, there is a material issue of fact between the Applicant and Intervenors. 10 C.F.R. § 2.309(f)(1)(vi). Since one of the scenarios that 10 C.F.R. § 50.54(hh)(2) is required to address is an aircraft impact, and since regulatory guidance in NEI 07-13 is now available that includes a “best-estimate” model of the resulting damage footprint from such an impact, the Applicant must establish that the proposed mitigative measures would be effective in maintaining or restoring reactor

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containment, core cooling, and spent fuel pool cooling capabilities following an event that encompasses the full spectrum of damage states.

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However, what assumptions did this evaluation of vulnerable buildings make regarding the full spectrum of damage states? Did the evaluation consider whether, as stated in NEI 06-12, that mitigative measures as identified do not assure success in dealing with large magnitude fire(s) and explosion(s) events? The submittal does not discuss these points.

The Applicant is to establish by a preponderance of the evidence 'reasonable assurance' that public health, safety and environmental concerns are protected. *Commonwealth Edison Co.* (Zion Station, Units 1 and 2), ALAB-616, 12 NRC 419, 421 (1980). Without baseline assumptions about the number and magnitude of fires and explosions, there is no reasonable assurance that the mitigative strategies will be adequate. The Intervenors recognize that the Commission has discretion to deal with compliance with its regulatory requirements on a case-by-case basis. Whether the mitigative strategies proposed herein by the Applicant provide adequate protection under the Atomic Energy Act are determinations "where the Commission should be permitted to have discretion to make case-by-case judgments based on its technical expertise and on all the relevant information," *Union of Concerned Scientists v. Nuclear Regulatory Commission*, 880 F.2d 552, 558 (D.C. Cir. 1989), "rather than by a mechanical verbal formula or a set of objective standards." *Id.* However, the Commission cannot be expected to make a reasonable case-by-case determination without an adequate starting point. In this case,

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that means a description in quantitative and/or qualitative terms of the magnitude of the fires and explosions that the mitigative strategies are intended to address which encompasses the full spectrum of damage states.

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**The submittal does not specify that the subject assessments, evaluations, etc. will be done based on the full spectrum of damage states. The assessments, evaluations, etc. will evidently determine the scope of the Phase 1 fire fighting strategy and therefore must be done with the full spectrum of damage states in order to determine whether the proposed fire suppression strategies are adequate.**

The arguments and authorities related to Contention One are incorporated by reference.

Additionally, Intervenor contend that the Applicant's assumption that these assessments, evaluations, etc. can be delayed until near the completion of construction is unreasonable.<sup>9</sup> This is particularly the case because of the Applicant's failure to explicitly apply the full spectrum of damage states to the various assessments, evaluations, etc. The Board should not assume, as the Applicant apparently does, that the assessments will yield acceptable results under the full spectrum of damage states. The assessments need to be completed now to determine whether the requirements of 10 C.F.R. § 50.54(hh)(2) can be met. Using the Applicant's assumption that

<sup>9</sup> One reason why the detailed plans should be developed sooner rather than later is that every plant will have to submit an aircraft impact assessment to comply with the new aircraft rule. 10 C.F.R. § 50.150. The assessment is intended to identify design features that could mitigate aircraft attacks with reduced reliance on operator actions. Until the necessary operator actions are fully defined (e.g. as a subset of 10 C.F.R. § 50.54 (hh)(2) actions), it will be impossible to determine to what extent reliance on operator actions would be reduced through design changes.

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these assessments may be deferred until near the end of construction means that the Board must also assume that these assessments will ultimately yield results consistent with the subject regulatory requirements. Intervenors contend that the assessments are too important for deferral to a date in the future when operation of the plant is imminent.

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**However, there is no quantitative or qualitative description of the “event” nor is there a stated commitment to evaluate the dose projection models considering the full spectrum of damage states.**

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Without an appropriately detailed and accurate model based on the full spectrum of damage states, the Applicant cannot demonstrate that its plan for mitigating LOLAs can be effectively executed without subjecting on-site responders to excessive radiation exposure. For example, the NEI 06-12 guidance describes circumstances that would expose emergency responders to significant exposures while dealing with a spent fuel pool fire or loss of cooling event. The mitigative measures will put emergency responders in situations that will result in major exposures when for example, dealing with spraying the spent fuel pool.<sup>10</sup>

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However, the MST does not specify whether the LOLA "event"

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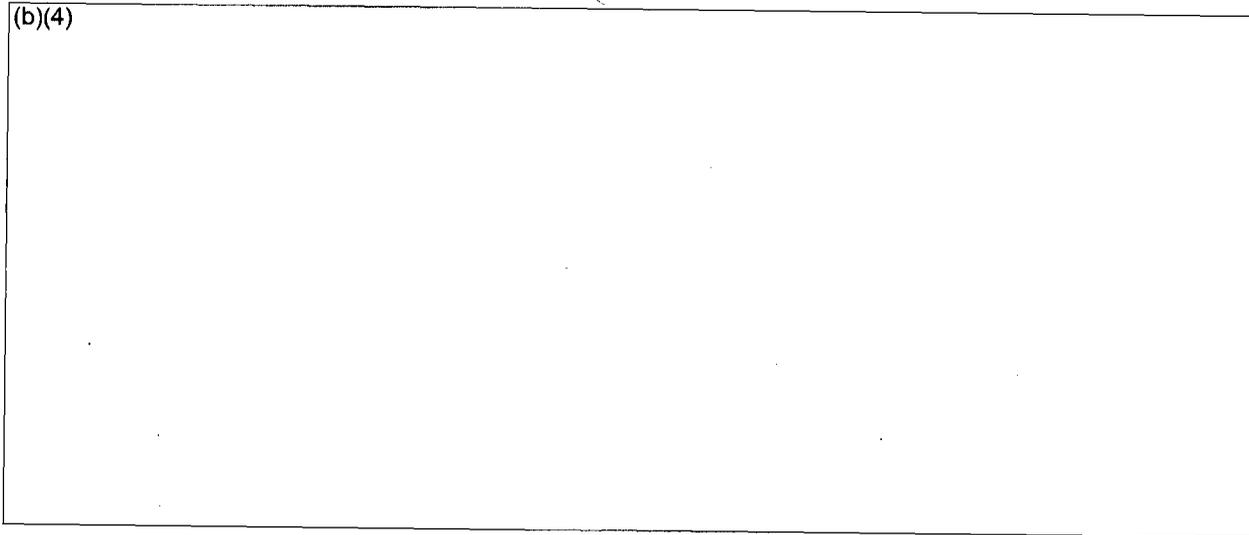


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commitments/strategies are or will be developed based on a damage footprint of sufficient extent and severity to accommodate the likely impact(s) of large commercial airliner(s) and/or the full spectrum of damage states. Accordingly, there is no way to determine whether the proposed mitigative strategies are adequate.

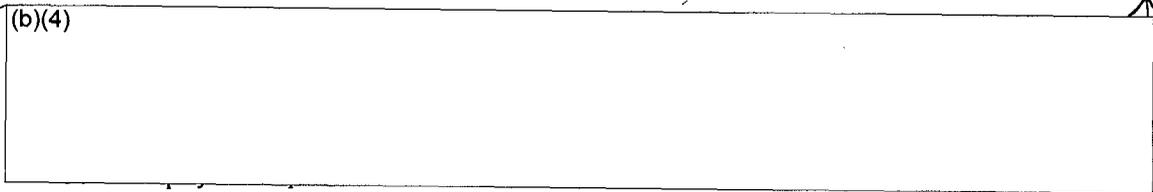
Each reference to the undefined "event" or corresponds to a significant functional mitigative measure, but the underlying assumptions related to the magnitude of the initiating event(s) are omitted. This omission contention addresses similar deficiencies as discussed in Contention One, *supra*. The legal authorities cited in Contention One for omission contentions are incorporated by reference. Additionally, the argument in Contention One regarding the relationship between determinations of efficacy of mitigative measures and the specification of the full spectrum of damage states to which apply is incorporated by reference.

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These deficiencies in the submittal can be cured only by a comprehensive analysis that fully accounts for and discusses how each is dependent on the magnitude of the initiating event(s) to which the particular mitigative measure applies.

Whether the Applicant's submittal is adequate in light of this contention raises a material issue of fact. 10 C.F.R. § 2.309(f)(1)(vi).

**5. The NEI 06-12 guidance assumes no heroic action should be required for the mitigative measures. However, the guidance also concedes that the “[i]dentified response capabilities will not ensure success under the full spectrum of potential damage states.” Accordingly, the submittal should reconcile the premise that no heroic actions will be required with the recognition that the mitigative measures may be unsuccessful, considering the full spectrum of damage states, and that heroic actions would in fact be required to actually mitigate the effects of fires and explosions that are not controlled by use of the Applicant's mitigative measures.**

In order to effectively suppress nuclear plant fires that do not respond to the mitigative measures in the Applicant's submittal, extraordinary actions, either individual or collective, would be required. Presumably, the greatest hazard would be radiological exposures for those engaged in extraordinary actions. There are no procedures in the submittal to determine which

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individual(s) would receive higher doses of radiation above those that might reasonably be incurred by individuals carrying out the STP Emergency Plan, or what information individuals would receive for training or other information disclosures about the potential magnitude of exposures that might be incurred in carrying out LOLA mitigative actions and the effects of such radiation exposures.

[Redacted]

(b)(4)  
In light of this recognition there is ample reason to require an analysis of radiation exposures in light of the full spectrum of damage states.

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SOUTH TEXAS

Intervenors incorporate by reference the arguments and authorities in Contention One regarding contentions of omission. Further, Intervenors incorporate by reference the arguments and authorities in Contention One, Two, Three, and Four as related to determinations of the efficacy of Mitigative Strategies and the need to apply such to the full spectrum of damage states. Intervenors incorporate by reference the arguments and authorities in Contention Three regarding the adequacy of dose assessments.

Whether the Applicant's submittal is adequate in light of this contention raises a material issue of fact. 10 C.F.R. § 2.309(f)(1)(vi).

**6. The South Texas Project 3&4 Mitigative Strategies Report is deficient because it does not address strategies suitable for the particular circumstances associated with LOLAs occurring during reactor outages. Therefore, it does not comply with the requirements of 10 C.F.R. §50.54(hh)(2), which applies both during full-power operation and during outages.**

The STP 3&4 Mitigative Strategies Report is deficient because it does not address effective strategies for mitigating LOLA events during a reactor outage. There are many differences during outages compared to full-power operation that may have a significant impact on the effective implementation of LOLA mitigative strategies. During outages, the risk of core damage is typically significantly higher than when the reactor is at full power. Important safety systems may be out of service for maintenance. The containment hatch may be open. Or the entire core may be off-loaded in the spent fuel pool, significantly increasing the pool heat load. In addition, there may be a large number of temporary contractor personnel on-site, which could complicate emergency response and other mitigative strategies.

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These are arbitrary restrictions, as 10 C.F.R. § 50.54(hh)(2) applies to the plant both when the reactor is at power and when it is in an outage. They are also non-conservative as mitigative strategies designed for a reactor at 100% power with no equipment out of service and no hot spent fuel, but may well not work under the considerably different circumstances that may be encountered during an outage.

In order to comply fully with 10 C.F.R. §50.54(hh)(2), the Mitigative Strategies Report must consider the circumstances during an outage and evaluate how the mitigative strategies for full-power operation may have to be modified to be effective during outages.

EXEMPTION 4  
SOUTH TEXAS

[Redacted]

(b)(4)

However, there is no discussion of the number or magnitude of fires that would require water nor the full spectrum of damage states that would require fire suppression and cooling functions. There is no evidentiary support for an assumption by the Applicant that adequate supplies or pumping capacity is available simultaneously for emergency reactor cooling, SFP cooling and suppressing multiple fires.

This is an omission contention and like others related to the submittal, is based on the failure to discuss the full spectrum of damage states assumed. Accordingly, the Intervenor incorporates by reference the arguments and authorities regarding omission contentions in Contention One.

In this instance the submittal quantifies neither the number nor magnitude of fires assumed in the severe part of the damage spectrum. Nor does the submittal quantify the total pumping capacity with compromised conditions realistically anticipated under the severe part of the damage spectrum.

[Redacted]

(b)(4)

The Applicant also assumes it has adequate fire suppression capacity but fails to specify the damage states assumed related thereto. Additionally, the Applicant does not discuss compromised water supplies nor pumping capacity under the full spectrum of damage states. These omissions are material to a determination of the efficacy of the mitigative measures.

EXEMPTION 4  
SOUTH TEXAS

Whether the Applicant's submittal is adequate in light of this contention raises a material issue of fact. 10 C.F.R. § 2.309(f)(1)(vi).

**Request for Hearing Pursuant To Subpart G, 10 C.F.R. § 2.700 et seq.**

10 C.F.R. § 2.309(g) states that “[a] request for hearing and/or petition for leave to intervene may, except in a proceeding under 10 C.F.R. § 52.103, also address the selection of hearing procedures, taking into account the provisions of § 2.310.” Alternatively, 10 C.F.R. § 2.310(d) presumes use of Subpart L unless the proceeding involves “resolution of issues of material fact relating to the occurrence of a past activity, where the credibility of an eyewitness may reasonably be expected to be at issue, and/or issues of motive or intent of the party or eyewitness material to the resolution of the contested matter.”

In this case, Intervenors anticipate that the Applicant will argue that its mitigative strategies are adequate to meet the requirements of 10 C.F.R. § 50.54(hh)(2). Such an assertion sets up a material fact issue related to the assumptions about the full spectrum of damage states. Live testimony on the contentions herein is necessary because the credibility of the witnesses sponsoring such testimony would be in issue.

**Conclusion**

Based on the arguments and authorities above, Intervenors urge that the contentions specified herein be admitted for adjudication and that a hearing pursuant to Subpart G, 10 C.F.R. § 2.700 et seq. be ordered for these contentions.

**CONTAINS SENSITIVE UNCLASSIFIED NON-SAFEGUARDS INFORMATION  
WITHHOLD PER 10 C.F.R. § 2.390 AND JULY 1, 2009 PROTECTIVE ORDER**

Respectfully submitted,

/s/ Robert V. Eye  
Robert V. Eye, Kan. Sup. Ct. No.10689  
Kauffman & Eye  
Suite 202  
112 SW 6th Ave.  
Topeka, Kansas 66603  
785-234-4040  
bob@kauffmaneye.com

August 14, 2009

**UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION  
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD PANEL**

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**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**

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**CERTIFICATE OF SERVICE**

I hereby certify that on August 14, 2009 a copy of "Intervenors' Contentions Regarding Applicant's Submittal Under 10 C.F.R. § 52.80 and 10 C.F.R. § 50.54(hh)(2) and Request for Subpart G Hearing" was served by the Electronic Information Exchange consistent with the Board's July 1, 2009 protective order 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

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

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

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

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: gxal@nrc.gov

Office of the General Counsel  
U.S. Nuclear Regulatory Commission  
Mail Stop O-15D21  
Washington, DC 20555-0001  
James Biggins, Sara Brock, Jessica Bielecki  
E-mail: James.Biggins@nrc.gov;  
Sara.Brock@nrc.gov; jab2@nrc.gov

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WITHHOLD PER 10 C.F.R. § 2.390 AND JULY 1, 2009 PROTECTIVE ORDER~~

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  
Steven P. Frantz, Stephen J. Burdick,  
John E. Matthews,  
E-mail: sfrantz@morganlewis.com;  
sburdick@morganlewis.com;  
jmatthews@morganlewis.com

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