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STATE OF NEW YORK
OFFICE OF THE ATTORNEY GENERAL

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OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

DIVISION OF SOCIAL JUSTICE
ENVIRONMENTAL PROTECTION BUREAU

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February 22, 2008

Office of the Secretary of the Commission
United States Nuclear Regulatory Commission
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Attention: Rulemaking and Adjudications Staff

Re: Indian Point Nuclear Generating Unit Nos. 2 and 3: Renewal of Operating License
Nos. DPR-26 and DPR-64 for an Additional 20-Year Period
(ASLBP No. 07-858-03-LR-BD01)

Dear Sir/Madam:

Enclosed please find the State of New York's Reply in Support of Petition to Intervene in
the above-referenced matter, with a Certificate of Service

Please feel to contact me if you have any questions about the State's submission.

Respectfully submitted,

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SECY-037

SECY-02

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
OFFICE OF THE SECRETARY

ATOMIC SAFETY AND LICENSING BOARD

In the Matter of

ENTERGY NUCLEAR INDIAN POINT 2, LLC
ENTERGY NUCLEAR INDIAN POINT 3, LLC
ENTERGY NUCLEAR OPERATIONS, INC.

USNRC Docket Nos.
50-247 & 50-286

INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 & 3

ASLB No.
07-858-03-LR-BD01

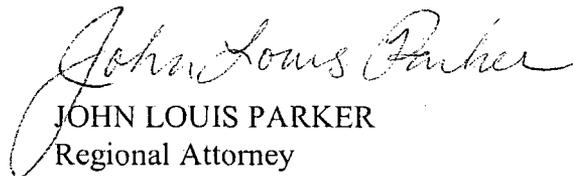
Regarding the Renewal of Facility Operating Licenses
No. DPR-26 and No. DPR-64 for an Additional 20-year Period

NOTICE OF APPEARANCE BY JOHN LOUIS PARKER

Pursuant to 10 C.F.R. § 2.314(b), JOHN LOUIS PARKER hereby enters an appearance in this proceeding as duly authorized legal counsel for the State of New York Executive Agencies. Undersigned counsel is a member in good standing of the bars of the State of New York, the U.S. District Court for the Southern District of New York, and the United States Supreme Court.

February 20, 2008

Respectfully submitted,



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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

-----X
In re:

License Renewal Application Submitted by

Entergy Nuclear Indian Point 2, LLC
Entergy Nuclear Indian Point 3, LLC and
Entergy Nuclear Operations, Inc.

Docket Nos. 50-247-LR and 50-286-LR

ASLBP No. 07-858-03-LR-BD01

DPR-26, DPR-64
-----X

CERTIFICATE OF SERVICE

Pursuant to 28 U.S.C. § 1746 Teresa Fountain hereby declares:

I am over 18 years old and am an employee in the New York State Office of the Attorney General.

On February 22, 2008, I served upon the following persons to the following mailing addresses, New York State's Reply in Support of Petition to Intervene, by delivering true copies thereof, properly enclosed in a sealed, postpaid Federal Express wrapper, specifying overnight delivery, to the Federal Express facility in the City of Menands, New York:

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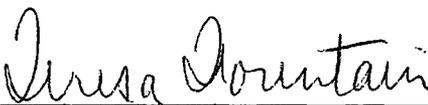
In addition, copies of the documents were sent to the e-mail addresses listed above.

I also served the Notice of Appearance of John L. Parker in the same fashion.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on:

this 22nd day of February 2008
Albany, New York



Teresa Fountain

RAS 1511

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

-----X

In re:

Docket Nos. 50-247-LR and 50-286-LR

License Renewal Application Submitted by

ASLBP No. 07-858-03-LR-BD01

Entergy Nuclear Indian Point 2, LLC,
Entergy Nuclear Indian Point 3, LLC, and
Entergy Nuclear Operations, Inc.

DPR-26, DPR-64

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NEW YORK STATE
REPLY IN SUPPORT OF PETITION TO INTERVENE

Filed on February 22, 2008

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

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In re: Docket Nos. 50-247-LR and 50-286-LR
License Renewal Application Submitted by ASLBP No. 07-858-03-LR-BD01
Entergy Nuclear Indian Point 2, LLC, DPR-26, DPR-64
Entergy Nuclear Indian Point 3, LLC, and
Entergy Nuclear Operations, Inc.
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NEW YORK STATE
REPLY IN SUPPORT OF PETITION TO INTERVENE

Petitioner the State of New York (“New York State”) respectfully submits this reply to the responses submitted by the NRC Staff (“Staff”) and the applicant Entergy (“Entergy”) both dated January 22, 2008.

INTRODUCTION

New York State's Notice of Intention to Participate and Petition to Intervene (“New York State Petition”) sets forth with particularity each of the contentions raised, with adequate basis and supporting evidence, as required by 10 C.F.R. § 2.309(f). However, Entergy and Staff have not applied the same level of detailed analysis to their responses. Both responses (*see* NRC Staff's Response to Petitions for Leave to Intervene filed by the State of New York, *et al.*, (January 22, 2008)(“Staff Response”), ADAMS ML080230543; Answer of Entergy Nuclear

Operations, Inc. Opposing New York State's Notice of Intention to Participate and Petition to Intervene (January 22, 2008)("Entergy Answer"), ADAMS ML080300149) are replete with mistaken claims that New York State's contentions contain mere "bare assertions" for which no evidence, legal authority or analysis are provided in support, when in fact New York State *has* provided legal analysis and factual support for each of its proposed contentions.¹

In 26 of New York State's 32 proposed contentions, Entergy simply ignores New York State's substantial evidence and reasoning while baldly asserting, with no further analysis, that New York State has failed to provide an adequate factual basis for its claims. In 16 of the 32 contentions, Staff do the same. The examples below, while by no means exhaustive, illustrate a deliberate pattern of unsupported assertions by Entergy and Staff that ignore the substance, or in some cases, even the existence of New York State's proffered evidence:

- Entergy dismisses New York State's third contention as "failing to controvert the content of the LRA," Entergy Answer at 42, while ignoring a 13 page chart, prepared by the State's expert, that sets forth the extent to which 70 industry-drafted versions of GDC have been incorporated into specific sections of the LRA for both units and highlights the substantial safety differences between the industry lobbyist's version and the 1967 AEC Draft GDC. New York State Petition, Contention 3 at ¶¶ 6-7 and Declaration of Paul Blanch and attached chart.
- Entergy summarily dismisses New York State's contention regarding Entergy's analysis of alternative land use scenarios as "baseless speculation . . . [and] bare assertions," Entergy Answer at 117, although

¹ See Attachment A which provides cross-references between the "bare assertions" criticisms from Entergy and Staff of alleged inadequacies in New York State's Petition and places in the New York State Petition that contain the information Entergy and Staff assert is missing but which they fail to address.

this contention relies on recent regional land use studies, economic analysis and census data and is supported by expert testimony which analyzes the potential impact of license renewal on local property values for land adjacent to Indian Point. New York State Petition, Contention 17.

- Staff asserts that New York State has provided no evidence to support its contention that impingement or entrainment actually occurs at Indian Point, Staff Response at 209, while ignoring that the State has referenced a section of Entergy's ER that *admits* that impingement occurs. New York State Petition, Contention 32 at ¶ 17.

Moreover, contentions that fall squarely within the scope of admissibility, some of which have already been accepted as admissible in other licensing proceedings with less bases and supporting evidence, are opposed in knee-jerk fashion by Entergy and Staff.² Thus, Contentions 5-8 and 23-26, which identify specific deficiencies in the AMP, point to specific portions of the LRA where these deficiencies exist, identify supporting documents and studies that demonstrate why an enhanced aging management plan ("AMP") is required, and are all supported by reasoned declarations of highly qualified experts, are opposed without a reasoned analysis, and with nothing more than assertions and conclusory statements or occasionally with contrary evidence, thereby demonstrating the existence of a genuine dispute on a material fact. All this is done in a vain attempt to demonstrate that the contentions are without a basis, lack any supporting evidence, or are outside the scope of license renewal proceedings. Similarly, Contentions 9-17, 27-28, and 30-32 identify specific deficiencies in the ER, point to the portions of the ER where

² Although the Staff concedes that New York State Contentions 10, 26, 30, and 31 are admissible, as noted below, it inexplicably raises spurious and insupportable objections to other equally admissible contentions and frequently mischaracterizes the contentions.

these deficiencies exist, identify supporting documents and studies that demonstrate why further analysis is required in the ER, and are all supported by declarations of highly qualified experts, yet are similarly opposed in conclusory fashion or with contrary evidence.

In the following pages these deficiencies are identified with respect to each contention. However, before turning to each contention, New York State notes the failure of either Staff or Entergy to challenge the extensive factual support and legal analyses offered by New York State to support certain contentions that have not been the frequent subject of previous license renewal proceedings. The scope of these contentions is addressed in an extended legal discussion on pages 298-311 of the New York State Petition and, because of its central importance to the non-responsive challenges to these Contentions in the Oppositions, is briefly summarized in the following paragraphs.

A. Contentions 1-4 Are Admissible Because They Allege the “Application Fails to Contain Information on a Relevant Matter as Required by Law” as Provided in 10 C.F.R. § 2.309(f)(1)(vi) (New York State Petition at 305-311)

There is no serious question that challenging an LRA for its failure to “contain information on a relevant matter as required by law” (10 C.F.R. § 2.309(f)(1)(vi)) is within the scope of permissible contentions. Contentions 1-4 identify, with specificity, the missing information, its importance and relevance to this proceeding, the legal obligation imposed by the regulations on Entergy to provide this information and a detailed listing of the deficiencies in supporting evidence and expert declarations.

These contentions do not seek to have the Board rule on the adequacy of the Staff review

of the LRA. They seek to have the Board rule that based on *the Board's* review of the LRA, the LRA is legally deficient. Entergy and Staff doubt the Board can make such a determination but at no time do they challenge the case law and regulations that clearly show that such contentions, if properly supported by evidence and sufficiently specific, are valid, nor do they challenge the power of the Board, granted in 10 C.F.R. § 2.319, to suspend the hearing pending the filing of a minimally complete LRA. If, as Entergy and Staff argue, the Board cannot suspend the hearing merely because a minimally complete LRA was not filed - - or, in the words of the Commission, that "required reports, analyses and other documents required" in the LRA, 56 Fed. Reg. at 64,963, were not provided - - then the Board's only option is to deny the application. *Matter of Nuclear Management Company, LLC* (Monticello Nuclear Generating Plant), 62 N.R.C. 735, 743 (Nov. 1, 2005) ("if the contention were admitted and found meritorious, the license application would not be granted."). In either event, Contentions 1-4 are valid and admissible challenges to the LRA.

There are several additional reasons why Contentions 1-4 are within the scope of issues authorized for the license renewal hearing. First, unless the issue of completeness of the application under the provision of the NRC regulations is raised in this proceeding, it cannot be raised anywhere else. As Entergy and Staff note, the adequacy determination by the Staff is not reviewable. Entergy Answer at 36; Staff Response at 26-27. In addition, a direct court challenge to acceptance of the application is not available. *See Concerned Citizens of Rhode Island v. Nuclear Regulatory Commission*, 430 F.Supp. 627 (D.R.I. 1978). Second, whether the

application is minimally complete and accurate is a critical issue, the resolution of which has profound impact on the rights of Entergy and the public. Only if Entergy has filed “a sufficient application for renewal of . . . an operating license . . . at least 5 years before the expiration of the existing license” can it claim that “the existing license will not be deemed to have expired until the application has been finally determined.” 10 C.F.R. § 2.109(b). Third, New York State is guaranteed a “reasonable opportunity for State representatives to offer evidence, interrogate witnesses, and advise the Commission as to the application” “[w]ith respect to each application for Commission license.” 42 U.S.C. § 2021(l). Since extension of the IP2 and IP3 licenses pursuant to § 2.109(b) is a licensing action, New York State’s opportunity to exercise the rights secured to it under § 2021(l) is this proceeding.

B. 10 C.F.R. § 54.30 Does Not Apply to New York State’s Contentions 18-22 (New York State Petition at 298-305)

These five contentions are based upon the fact that Entergy is unable to meet the requirements of 10 C.F.R. §§ 54.33 and 54.35, which essentially require that before Entergy receives a license renewal it must demonstrate that it is in compliance with NRC Regulations. Each proposed contention, as discussed in the New York State Petition and this Reply, meets all the provisions of 10 C.F.R. § 2.309(f) for admissibility. They are specific; they identify Commission regulations that set the safety standards that Entergy does not meet; they identify the bases upon which the claim is made that Entergy fails to meet those safety regulations; and they contain substantial supporting evidence, from documents and expert declarations, to demonstrate there is a genuine factual dispute and that New York State has substantial evidence to support its

position on the issues.

The only regulation that arguably prevents consideration of these safety issues in this license renewal proceeding is 10 C.F.R. § 54.30. But that provision only prohibits litigation of the question of whether an applicant is in compliance with its current licensing basis (“CLB”).

“The licensee’s compliance with the obligation under Paragraph (a) of this section to take measures under its current license is not within the scope of the license renewal review.” *Id.*

Where, as here, the applicant does not have an ascertainable CLB, *see* Contentions 2 and 3, there is no way to make a challenge to its failure to be in compliance with its CLB. Rather, in such a case, the question becomes whether the plant is in compliance with NRC safety regulations.

There is no prohibition against raising that question, at least not where the applicant is unable to claim that a challenge to its compliance with a safety regulation is essentially a challenge to its compliance with its CLB. To make that argument, an applicant would have to have an ascertainable CLB, which Entergy does not.

C. A Strict Reading of the Regulations Supports New York State’s Petition

In its Memorandum and Order (Denying the Village of Buchanan’s Hearing Request and Petition to Intervene) (Dec. 5, 2007), this Board held that the “Commission has emphasized that the rules on contention admissibility are ‘strict by design.’” *Slip op.* at 4 (fn. omitted). Of course, this strictness is not limited only to measuring the pleadings of proposed intervenors. It applies with equal force to the pleadings of those opposing intervention. Thus, the Board should read the contentions submitted by a proposed intervenor and the oppositions with strict adherence

to the language of the regulations and of the contentions.

By failing to address in their responses significant legal analysis, supporting evidence and expert declarations, as presented in the New York State Petition, Entergy and Staff have conceded the validity of that legal analysis, supporting evidence and expert declarations and should be barred from presenting “late-filed” counter-arguments. *See Louisiana Energy Services, L.P.* (National Enrichment Facility), 60 N.R.C. 223, 225 (Aug. 18, 2004) *rejecting reconsideration* 60 N.R.C. 619, 623 (2004).

As the following contention by contention analysis demonstrates, each contention offered by New York State meets the strict pleading requirements of 10 C.F.R. § 2.309(f) and should be admitted.

CONTENTION 1

In Contention 1 New York State argued that the LRA violates 10 C.F.R. § 59.13 because it is incomplete and inaccurate, and that the hearing should be suspended until Entergy files an amended application.

The NRC’s regulations, 10 C.F.R. § 2.309(f)(1)(vi), explicitly acknowledge the right of an intervenor to file a contention based on the absence of required data. “[I]f the petitioner believes that the application fails to contain information on a relevant matter as required by law, [the petitioner must identify] each failure and the supporting reasons for the petitioner’s belief.” Contention 1 is based on the absence of specific data, required by law, and identified in the bases

for the Contention.³ Neither Entergy nor the Staff joins issue with New York State on the question of whether the deficiencies exist. For example, Entergy makes no attempt to demonstrate that the UFSAR does in fact contain all the information required by § 50.71(e) or to challenge the specific examples of deficiencies in the UFSAR identified in the supporting evidence and the declaration of David Lochbaum. Entergy also makes no attempt to challenge the fact that the UFSAR merely commits Entergy to comply with a set of trade association drafted GDC, never adopted by the AEC or the NRC and which are in several material respects (identified in Contention 3 and the Declaration of Paul Blanch) substantially different than the relevant GDC.⁴

Entergy and Staff also do not dispute the fact that several cases cited in the New York State Petition have held that a challenge to the completeness of an application is a valid contention when it meets the specificity requirements of the regulations. “A contention alleging that an application is deficient must identify ‘each failure and the supporting reasons for the

³ The bases reference other Contentions that identify in detail how the LRA fails to include specific aging management programs for particular systems. *See e.g.*, Contentions 6, 7, and 8. The bases also reference other Contentions that identify substantial deficiencies in the ER. *See e.g.*, Contentions 9, 10, 11, and 17.

⁴ At many points in the oppositions the assertion is made that New York State has no supporting evidence for its contention. To the contrary, in every contention there is substantial supporting evidence which is directly linked to the contention, identifies, where appropriate, the portions of the LRA with which the evidence is in conflict, and is often supplemented with the detailed declaration of an expert witness. In the interest of brevity, this Reply does not repeat that evidence, unless, which rarely occurs, Entergy or Staff directly challenge one or more of the supporting evidence documents or declarations.

petitioner's belief.' 10 C.F.R. § 2.714(b)(2)(iii).” *In the Matter of Duke Energy Corporation* (Oconee Nuclear Station, Units 1, 2, and 3), CLI 99-11, 49 N.R.C. 328, 336-37 (1999)(citing predecessor of § 2.309(f)(1)(vi)).⁵

Since Entergy and Staff are unable to contest the admissibility of the contention as filed, they mischaracterize the contention so that it appears to be one which they can contest. Both Staff and Entergy assert that Contention 1 should be rejected because it challenges the decision of the Staff to docket the application. Entergy Answer at 36 (“At the outset, NYS argues that the NRC should not have docketed the LRA due to purported omissions from the document”) and Staff Response at 26 (the contention “improperly raises an issue (the Staff’s determination to accept the LRA for docketing) that is not subject to litigation”). In truth, the contention plainly avoids that prohibited assertion. New York State Petition at 308 (“New York State is not asking the Board to review or even comment upon the Staff’s decision to accept the application”). New York State asks the Board to take action based upon the fact that the application has been accepted for filing and to recognize the impact that will have on the Board and the parties given the severe deficiencies in the LRA. As the Commission noted when amending the license renewal regulations in 1991, it is “enough that the licensee submits the *required reports, analyses*

⁵ In *Duke*, the Commission characterized the rejected contention as follows: “Contention One alleges that ‘[a]s a matter of law and fact,’” Duke Energy’s license renewal application for the Oconee Nuclear Station, Units 1, 2, and 3 “is incomplete, and should be withdrawn and/or summarily dismissed.” *Id.* at 335 (reference omitted). The Commission rejected the contention for lack of specificity, but recognized that a contention such as Contention 1 here, would be admissible if it included the required specificity.

and other documents required' in the LRA. 56 Fed. Reg. at 64,963 (emphasis added).

Contention 1 alleges that required reports, analyses and other required documents have not been submitted. Moreover, it identified the missing documents and information. New York State Petition at 1, ¶ 2, 4, 9, 10.

Entergy and Staff seek to belittle the LRA deficiencies they fail to contest by noting that RAIs and responses thereto are normal iterations in the license review process and such tweaking of an otherwise complete application is not grounds for a contention. Entergy Answer at 36-37, 39; Staff Response at 27-28. New York State does not merely note the existence of RAIs as did the rejected intervenor in *Duke* 249 N.R.C. at 336, ("The NRC's issuance of RAIs does not alone establish deficiencies in the application, or that the NRC staff will go on to find any of the applicant's clarifications, justifications, or other responses to be unsatisfactory." but identifies specific LRA deficiencies, most of which have been ignored by the Staff in its review.

Entergy and Staff also claim that identifying deficiencies in the UFSAR and GDCs creates issues related to the CLB and therefore are forbidden from consideration in the license renewal proceeding. Entergy Answer at 36-38; Staff Response at 28-33. What is forbidden is consideration of whether the licensee is in compliance with its CLB. 10 C.F.R. § 54.30(b).

What is alleged here is that there is no ascertainable CLB due to the deficiencies in the UFSAR and the GDC commitments and thus, because the CLB is the starting point for conducting a review of plant systems and components to determine which systems and components require

aging management, the LRA is inherently deficient.⁶ Entergy and Staff neither can, nor do, offer a rebuttal to this reasoning.

Entergy and Staff also confuse the question of whether an applicant has a CLB, which it must have to do an aging management analysis to identify relevant safety systems and components, and the entirely separate question of whether it must assemble the CLB in a single document and submit it with the LRA. Entergy Answer at 38, 41; Staff Response at 28-30. Contention 1 has nothing to do with the rejected “assembly” requirement. It rests on the more fundamental issue of whether a CLB exists and on that issue, the Commission was clear when it amended the license renewal regulations in 1991. *See* 56 Fed. Reg. 64,943 *et. seq.* The Commission determined that a CLB must exist in order to carry out the responsibilities imposed on an applicant under 10 C.F.R. § 54.21.

The Commission has revised §§ 54.21(a) and 54.37 to more clearly set forth the licensee's obligations with respect to the CLB. First, the renewal applicant must describe and justify the methodology used to identify SSCs important to license renewal. *The methodology must include a description of how the CLB was considered in identifying effective programs for SSCs important to license renewal that have age-related degradation that is unique to license renewal.*

Third, the licensee's evaluation of aging management programs includes consideration of the CLB as appropriate.

⁶ The analysis of the importance of the GDC and UFSAR for the CLB is discussed in the New York State Petition under Contentions 2 and 3 and in the discussion below of those two contentions.

Id. at 64,952-3 (emphasis added).

Finally, Entergy, but not Staff, makes the novel argument that this Board does not have the authority to suspend the licensing proceeding until Entergy has corrected the fundamental deficiencies in its application. Entergy Answer at 39, n.183. But it would be anomalous if the Board, even in the face of the fundamental deficiencies identified here, was required to proceed ahead as though no major changes would be forthcoming that might essentially moot out substantial effort by the parties and the Board. Entergy cites *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 & 2; Catawba Nuclear Station, Units 1 & 2) CLI-01-27, 54 N.R.C. 385 (2001) for the proposition that the Commission is reluctant to suspend licensing proceedings. Entergy Answer at 39. While that may be true as a general matter, the Commission has not barred a Board from using its authority under 10 C.F.R. § 2.319(g) to suspend the hearing schedule until an applicant has completed the essential components of its application. This is particularly important when, as here, it is uncontested that if the proceeding is not suspended, both the Board and the parties will waste considerable resources. In addition, there is no proffer or even an assertion from Entergy or Staff that if the Board were to suspend the hearing process at this time and directed Entergy to complete the basic elements of its LRA, the ultimate resolution of this hearing would be delayed. Overall efficiency is much more achievable when an application has been filed that includes “the required reports, analyses and other documents required,” as directed by the Commission. *See In the Matter of Nuclear Fuel Services, Inc.* (*Erwin, Tennessee*), 57 N.R.C. 9, 14 (Jan. 31, 2003)(relying on language identical to the

provisions of § 2.319(g) and deciding, in the face of no argument or evidence that proceeding to the hearing part of an application early would be more expeditious, that the “better course” was to suspend the hearing until all amendments to the application had been filed).

Since the time of filing New York State’s Petition, several events have occurred that underscore the wisdom of suspending the hearing until Entergy can put together the minimum elements of a complete application. First, on December 18, 2007, Entergy submitted an 85 page amendment to the LRA modifying it with respect to some of the very systems and components that were the subject of New York State Contentions and 100 pages responding to Staff inquiries by modifying the nature of Entergy’s commitment with regard to many such systems and components. ADAMS ML073650195. Second, on January 28, 2008, Staff reported on a phone conversation with Entergy in which Entergy is purported to have indicated the following:

“Entergy requested the telephone conference to apprise the staff of its intention to send a letter that will amend the LRA regarding metal fatigue. Entergy indicated that it plans to take the same approach as it did for the Pilgrim and FitzPatrick LRA’s.” ADAMS ML080230370. This bears directly on New York State Contention 26 which relies, in part, upon the failure of Entergy to determine how it would address the issue of cumulative use factors (“CUFs”) that were in excess of 1. Significantly, Entergy already possessed the information it needed to decide how it would address this issue - - *i.e.*, the way it did already in two other licensing proceedings - - but failed to note this in its LRA. This omission has involved a costly and time-consuming analysis by New York State when Entergy knew or should have known that its proposed manner of dealing with

CDFs for the Indian Point reactors was not satisfactory.

These two events are only the beginning of what can be reasonably expected to be a flood of substantial amendments and changes from Entergy. Entergy should not have the benefit of forcing other parties to waste their time on proposals that Entergy has reason to believe it will choose to, or be forced to, change, nor should the Board have to deal with issues which are likely to be quickly mooted by Entergy's ad hoc amendment process. The "better course," in this exceptional case with such a grossly deficient LRA, is to suspend the proceeding until Entergy has fully addressed these deficiencies and submitted the minimally adequate application contemplated by the regulations.

CONTENTION 2

New York State has alleged the UFSARs for IP2 and IP3 do not accurately reflect each unit as built and as it now exists due to the failure of the owners to update the UFSAR as required by 10 C.F.R. § 50.71(e), and there is no ascertainable CLB for either unit and thus, Entergy is unable to demonstrate that it has complied with the requirements of Part 54, particularly 10 C.F.R. § 54.21(a)(3) ("For each structure and component identified in paragraph (a)(1) of this section, demonstrate that the effects of aging will be adequately managed so that the intended function(s) will be maintained consistent with the CLB for the period of extended operation") and that it can meet the requirements of 10 C.F.R. § 54.29(a) ("Actions have been identified and have been or will be taken with respect to the matters identified in paragraphs (a)(1) and (a)(2) of this section, such that there is reasonable assurance that the activities

authorized by the renewed license will continue to be conducted in accordance with the CLB, and that any changes made to the plant's CLB in order to comply with this paragraph are in accord with the Act and the Commission's regulations").

Neither Staff nor Entergy contest the allegation that neither unit is in compliance with 10 C.F.R. § 50.71(e), nor that some of the non-compliance relates to items for which aging management programs may be required, nor that the UFSAR is a part of the CLB, nor that if the CLB is not ascertainable an applicant cannot comply with the requirements of 10 C.F.R. §§ 54.21 and 54.29. Their sole challenge to this contention is that, even though the CLB clearly includes the UFSAR, an applicant still has an ascertainable CLB, even if the UFSAR is not complete or accurate (or "updated"), because all the information that goes into the UFSAR exists in other documents that are also part of the CLB. Entergy Answer at 41; Staff Response at 29-30. In short, "no harm, no foul."

Entergy, and surprisingly Staff, basically write out of existence the UFSAR as having any useful function in ascertaining the CLB. However, actions taken by the Commission and the Staff underscore that the UFSAR is a vital component of the CLB and meeting the requirements of § 50.71(e) is essential to ascertain the CLB. For example, when the lessons learned from the Millstone shutdown of several years ago were analyzed by the Staff they told the Commissioners "[t]he utility's root cause analysis of the situation showed that (1) the plant's FSAR (*a key licensing document*) contained errors and omissions." SECY-97-036, February 12, 1997 at 3 (emphasis added). This echoed the Millstone owners' assessment of the root cause of its

problems. “In the first instance, management did not have adequate control of the Design and Licensing bases, as reflected by differences in the Millstone Unit 1 Final Safety Analysis Report (FSAR) and other documents, such as the Technical Specifications, Emergency Operating Procedures, and design documents.” (Letter from Northeast Utilities to NRC, December 6, 1996, at 1).

This emphasis on the critical importance of compliance with § 50.71(e) and its link to the CLB is not limited to other plants. In a 1996 letter to the then-owner of IP3, the Staff emphasized the importance of having an updated and accurate FSAR:

Over the past several months, NRC's findings during inspections and reviews have identified broad programmatic weaknesses that have resulted in design and configuration deficiencies at some plants, which could impact the operability of required equipment, raise unreviewed safety questions, or *indicate discrepancies between the plant's updated final safety analysis report (UFSAR) and the as-built or as-modified plant or plant operating procedures . . .* Overall, the NRC staff has found that some licensees have failed to . . . (4) *assure that UFSARs properly reflect the facilities.*

It is emphasized that the NRC's position has been, and continues to be, that *it is the responsibility of individual licensees to know their licensing basis, . . .*

Staff Letter to IP3 Owner, October 9, 1996 at 4-5 (emphasis added).

Staff has also emphasized the vital importance of compliance with §§ 50.71(e) and 50.59 in establishing enforcement priorities noting “the importance of maintaining and controlling changes to the FSAR so that both the licensee and the NRC understand the regulatory envelope

that has been established for the facility” and emphasizing that “[l]icensees must ensure that they are in conformance with the FSAR as it was a key element for the basis for the Commission’s decision in licensing the plant and continues to be an important consideration in current licensing actions.” SECY-96-154 at 3.

As recently as last year the Staff imposed a severe penalty on a licensee because of its failure to have an updated UFSAR, noting the role this failure played in “the licensee staff’s ability in 2005 to understand the current . . . licensing and design basis . . .” Notice of Violation [NRC Special Inspection Report 05000266/2006011; 050000301/2006011] Point Beach Nuclear Plant, Units 1 and 2 (Letter from Staff to Dennis L. Koehl, January 29, 2007 at 2). ADAMS ML070290711.

Finally, in a January 7, 2004, update to Revision 1 of LIC-100, “Control of Licensing Bases for Operating Reactors” the Staff concluded “the UFSAR maintains the details of the licensing basis . . .” LIC-100, Rev. 1, at Attachment 1, ADAMS ML033530249.

Contrary to Entergy and Staff’s view that an *updated* FSAR is not relevant, these NRC documents underscore the essential role of an accurate and complete FSAR as being essential if “individual licensees [are] to know their licensing basis,” so that “the licensee and the NRC understand the regulatory envelope that has been established for the facility,” to assure that licensees “understand the current . . . licensing and design basis” and that the “details of the licensing basis” are known. Entergy and Staff’s sole objection to Contention 2, their assertion that deficient UFSARs are irrelevant to the existence of a CLB, is baseless and totally contrary to

these well-established NRC policies.⁷

CONTENTION 3

In Contention 3, New York State asserted that the LRA violates 10 CFR § 54.29(a)(1) and (2) for IP2 and IP3 because it is not possible to ascertain whether the aging management requirements for all relevant equipment, components, and systems have been met.

Entergy and Staff do not dispute that the UFSARs for IP2 and IP3 submitted to the NRC as part of the April 2007 License Renewal Application plainly state that these two plants were built to comply with, and are committed to comply with, a set of design criteria proposed by a private lobbying group, the Atomic Industrial Forum (“AIF”). New York State Petition at 73-4. It is also not disputed that the AIF draft criteria are materially different from the AEC’s draft General Design Criteria (“GDC”) which were in effect when IP2 and IP3 were constructed. New York State Petition at 74-76 and Attachment to Declaration of Paul Blanch. Nor is it disputed that many of the differences between the AIF draft and the AEC draft relate to systems or components for which aging management would be required. *Id.* It is also not disputed that the CLB for IP2 and IP3 must include commitments by Entergy to comply with all specified Commission regulations which include the applicable GDC. 10 C.F.R. § 54.3(a). Thus, Entergy and Staff do not dispute the core allegations in Contention 3.

⁷ This Contention does not assert that Entergy must redress non-compliance with § 50.71(e). Rather, this Contention asserts that because Entergy has not complied with § 50.71(e) and thus the UFSAR is inaccurate and incomplete, Entergy does not know its current licensing base and thus lacks the critical information and documentation it needs to assure that it has met the requirements of § 54.21(a) and will be able to meet the requirements of § 54.29(a).

What New York State, Entergy, and Staff disagree about is whether these undisputed allegations create an admissible contention. Entergy and Staff offer several theories to support their opposition to Contention 3, but there are essentially only three points:

1. Any allegation that the plant is not in compliance with the legally relevant GDC is not an issue that can be pursued in a license renewal proceeding. Entergy Answer at 42-43; Staff Response at 32.
2. These plants are not required to be in compliance with the final GDC as adopted in 1971 by the Atomic Energy Commission. Entergy Answer at 43; Staff Response at 32.
3. There is no identification in the Contention of the places in the LRA where the alleged deficiencies exist. Entergy Answer at 42.

These arguments, however, are based upon a fundamental mischaracterization of Contention 3.

First, the prohibition on consideration of compliance with the CLB, 10 C.F.R. § 54.30(b) is not at issue because Contention 3 is not an attempt to challenge Entergy's non-compliance with the CLB. Rather, the Contention argues that because Entergy has asserted that it is in compliance with draft criteria that are not applicable to IP2 or IP3, Entergy is unable to verify that it has found all relevant systems and components for which aging management is required. The relevant systems and components would include all those required by the AEC's draft GDC and Entergy denies that it follows those GDC. Thus, when Entergy conducted its review of systems and components as required by § 54.21(a) it could not have found all the relevant systems and components because it was identifying those systems and components based on a private lobbyist's hoped-for alternative version of the design criteria. Whether Entergy chooses to fix this problem by coming into compliance with and committing to compliance with the

legally relevant draft GDC is not a part of this Contention. Since the proper systems and components that require aging management have not been identified, the license renewal must be denied.

Second, the Contention never asserts that Entergy must comply with the 1971 final GDC. Rather, the Contention carefully notes the relevant GDC are the draft GDC published by the Commission in 1967.⁸ *See* New York State Petition at 74-76 and the attached chart to the Declaration of Paul Blanch. When these GDC were published, the Atomic Energy Commission

⁸ IP2 and IP3, which both received their construction permits prior to 1971, must be committed to compliance with the 1967 draft GDC. Entergy claims that the 1971 final GDC do not apply to IP2 and IP3, Entergy Answer at 193, n.193, but overlooks the point of this Contention which is that these older plants are routinely inspected by Staff and measured against the provisions of the 1967 draft GDC which are binding requirements. *See* Revised Notice of Violation (Inspection Report 05000263/2005003); Monticello Nuclear Generating Plant, EA-05-175 (September 22, 2005) Attachment at 2 (“The Refueling Floor and Reactor Building Plenum Radiation Monitors were designed to fail into a safe state on loss of power (as required by Draft GDC, Criterion 26) by registering an upscale tripped condition with a resultant partial PCIS, Group II actuation.”) ADAMS ML052660159; Notice of Violation issued to Prairie Island Nuclear Power Plant:

(“General Design Criteria 38, ‘Reliability and Testability of Engineered Safety Features,’ dated July 1967, required, in part, that all engineering safety features, and support systems such as the cooling water system, shall be designed to provide high functional reliability. General Design Criteria 39, ‘Emergency Power for Engineering Safety Features,’ dated July 1967, required, in part, onsite power systems shall be provided and designed with adequate independency, redundancy and capability to permit the functioning required of the engineered safety systems, and support systems such as the cooling water system, assuming a single failure”)

quoted in March 22, 2001 letter to NRC from the owner of the plant, ADAMS ML010940076.

said:

The Commission expects that the provisions of the proposed amendments relating to General Design Criteria for Nuclear Power Plant Construction Permits will be useful as interim guidance until such time as the Commission takes further action on them.

32 Fed. Reg. 10213 (July 11, 1967). Indeed, as the *Vermont Yankee* decision cited by Staff makes clear, the NRC did not rely on the AIF's suggested alternative criteria as Entergy's UFSAR and Opposition now suggest, but, rather, relied on either the July 1967 draft GDC or the February 1971 final GDC. See Staff Response at 32 (quoting *Entergy Nuclear Vermont Yankee, LLC* (Vermont Yankee Nuclear Power Station), DD-05-2, 62 N.R.C. 389, 396 (2005) ("The NRC evaluated each plant against the draft GDC or final GDC as applicable during initial licensing.")).

Third, far from lacking specific references to the LRA, the Contention is replete with references to the LRA noting the substantial difference between the design criteria to which Entergy says the plant was built and to which it has stated that it is committed, and the legally relevant draft GDC published by the Commission in 1967. See New York State Petition at 74-76; chart attached to Declaration of Paul Blanch. Thus, Entergy's failure to commit to the legally relevant draft GDC results in a substantial difference that impacts systems or components that require aging management:

Both IP2 and IP3 state compliance with GDC 47. However, the UFSARs have reworded and changed the intent of GDC 47 by removing the words "test periodically the delivery capability." The "delivery capability" of the Emergency Core Cooling System (ECCS) may be impacted by aging mechanisms such as pipe fouling, erosion, corrosion and heat exchanger tube fouling. The License Renewal Application (LRA) has failed to discuss any

Aging Management Program (AMP) to assure that the "delivery capability" of the Emergency Core Cooling System (ECCS) continues to meet the requirements of this GDC.

New York State Petition at 75.

Finally, both Entergy and Staff go to great lengths to evade the issue of which GDC the plant is committed to and which GDC it was built to meet. Indisputably the UFSARs submitted with the application state the GDC to which each unit was built and is committed are the draft criteria developed by AIF, which were never adopted by the Commission. Entergy further asserts that the 1971 GDC "*are not applicable to plants with construction permits issued prior to May 21, 1971.*" Entergy Answer at 43, n.193 (emphasis in original). But this assertion only creates more confusion and is contradicted by the record. In 1980 the owners of IP2 and IP3, in response to an Order from the NRC's Director of Nuclear Reactor Regulation, asserted in lengthy documents that each unit was in compliance with the 1971 GDC. *See e.g.*, August 11, 1980 submission from ConEd to NRC.⁹ In 1982, the Staff sent a response to these 1980 filings to the owners of each unit which stated, in identical language, "[o]ur audit of your submittal indicates that the Indian Point Unit [2 or 3] design and operation does meet the applicable regulations." January 19, 1982 letters from NRC to ConEd and Power Authority of the State of New York ("PASNY").¹⁰ Nonetheless, Entergy's UFSAR filed with the LRA represents that IP2 and IP3

⁹ NRC NUDOCS Management System Accession Nos. 8008130382, 8008130388.

¹⁰ NRC NUDOCS Management System Accession Nos. 8022040011 (IP2 - ConEd), 8202040353 (IP3 - PASNY).

were built and are committed to the AIF draft criteria, and throughout the UFSAR when design criteria are quoted, the language used is from the AIF draft.

The upshot is that neither the Board, the parties, or apparently Entergy know which, if any, GDC the plant was designed to meet and is committed to meet. Therefore, it is not possible to ascertain whether Entergy has met its burden to “identify and list those structures and components subject to an aging management review,” 10 C.F.R. § 54.21(a), because Entergy has not provided a clear and unequivocal statement of which GDC are applicable to it nor which GDC it relied upon in determining what systems and structures important for safety are in each unit.

CONTENTION 4

In Contention 4, New York State asserted that the applicant’s ER fails to comply with 10 C.F.R. § 51.53(c)(1) because it fails to provide a separate ER for each license for which an extension is sought.

This Contention is based on the plain language of 10 C.F.R. § 51.53(c)(1) which provides that “each applicant for renewal of a license to operate *a nuclear power plant* under part 54 of this chapter shall submit with its application *a separate document* entitled ‘Applicant’s Environmental Report - Operating License Renewal Stage’” (emphasis added). Contrary to that requirement, Entergy submitted one ER for both IP2 and IP3. The consequences of this violation of § 51.53(c)(1) is that Entergy severely distorts the analysis of alternatives, particularly the no-action alternative, by always comparing the options and their benefits and detriments to the

combined projected electric output of both IP2 and IP3 and always claiming the benefit of the proposed action is derived from operation of both units. In this way, Entergy never considers the alternative of approval of only unit and denial of renewal for the other unit, an alternative that is clearly feasible.

Entergy and Staff assert lack of basis in opposing admission of this contention, Staff Response at 33; Entergy Answer at 44-45, and Entergy further asserts that New York State's contention "stems from a fundamental misunderstanding of NEPA." Entergy Answer at 44.

In attacking the lack of basis for the Contention, both Staff and Entergy ignore the plain language of 10 C.F.R. § 51.53(c)(1) as one of the bases for this Contention. Both also ignore the fact that IP2 and IP3 were constructed at different points in time, have been treated by the NRC as separate units throughout their construction and operating life, have their own separate license, technical specifications, FSARs, amendment applications, enforcement history and, until recently, had separate owners, all of which were also offered as bases for the Contention. Indeed, Entergy's LRA, which notes that "there are marked differences in the number of IP2 and IP3 systems and in the boundaries for similarly named systems, (*Entergy's License Renewal Application*, Technical Information Section 2.0, p. 2.1-1., and Entergy's decision to include a separate seismic analysis for each unit, contradict the view that the two units may be analyzed as one. In this regard, the decision to treat the two generators as one combined unit *only* for the purposes of the environmental analysis of the proposal renewal of the separate operating licenses is arbitrary and contradictory to a plain reading of 10 C.F.R. § 51.53(c)(1).

Entergy's further assertion that New York State's contention constitutes an impermissible attack on the agency's regulations is also without merit. New York State does not challenge 10 C.F.R. § 51.53(c)(1), it demands that Entergy comply with it. Clearly when an application fails to comply with the regulations, an intervenor may challenge the claimed shortcoming. *Private Fuel, LLC* (Independent Spent Fuel Storage Installation), 53 N.R.C. 459, 469-70 (2001).

Both Oppositions merely ignore, but do not dispute, the fact that by combining the two units as one, Entergy avoids discussing one viable alternative - - renew the license of only one unit - - and distorts the analysis of the feasibility and benefits and detriments of alternatives, including the no-action alternative, by always comparing them to the option of relicensing both units or not relicensing any units, which avoidance and distortion are also bases for the Contention.

Furthermore, in compliance with 10 C.F.R. § 2.309(f)(1)(v) these bases are buttressed by substantial supporting evidence, including a concise statement of the alleged facts, references to expert testimony and specific portions of Entergy's ER, that demonstrate how energy alternatives to *either* one of the units could be feasible and beneficial and noting the consequences of Entergy's failure to consider such alternatives in comparison to each unit separately. Thus, there is clearly a factual basis for a material dispute between Entergy and New York State over the issue of whether the submission of a joint ER fundamentally distorts environmental analysis of the alternatives to relicensing either one of the units. Entergy's mere assertion to the contrary, unsupported by any specific reference to New York State's proffered evidence is without support

or merit.

Entergy's additional assertion that NEPA requires a consolidated ER and that separate ERs would violate NEPA's prohibition against segmentation is both counterfactual and misplaced in light of NEPA's intent. Far from fostering segmentation, New York State's Contention fosters NEPA's goal of encouraging analysis of alternatives. NEPA's prohibition against segmentation has historically been a prohibition against the slicing of a single project into pieces such that no significant environmental impact is associated with any one of them and thereby avoiding the preparation of an environmental impact statement that thoroughly analyzes the alternatives.¹¹ The underlying policy that supports the prohibition is to prevent the proponent of a project from dividing it in a way that distorts the analysis of environmental impacts and alternatives. It is precisely that policy which underlies New York State's Contention. In this case, lumping two units together distorts the analyses of alternatives.

Entergy's reliance on a "cumulative impacts" theory as a retort to Contention 4 is also misplaced. Under NEPA, a cumulative impacts analysis addresses the issue of federal actions

¹¹ See *Alpine Lakes Protection Soc'y v. Schlapper*, 518 F.2d 1089, 1090 (9th Cir. 1975) ("[c]haracterizing any piecemeal development of a project as 'insignificant' merits close scrutiny to prevent the policies of NEPA from being nibbled away by multiple increments, no one of which may in and of itself be important enough to compel preparation of a full EIS"). See also *Save Barton Creek Ass'n v. Federal Highway Admin.*, 950 F.2d 1129, 1139, 1143 (5th Cir.) (although state may not segment critical portions of proposed project prior to project becoming major federal action, highway project was not improperly segmented because highways had independent utility), *cert. denied*, 505 U.S. 1220 (1992).

taking place over a period of time,¹² and is irrelevant to the issue of whether NEPA requires a single environmental analysis for separate units under consideration at the same time. Further, the Commission has long acknowledged that the mere fact that two projects are “intimately related” does not *necessitate* their joint consideration for NEPA purposes.¹³

Neither is Entergy's position supported by governing case law or NRC precedent.¹⁴ Indeed, the Supreme Court has previously ruled that NEPA does not *necessarily* require a cumulative environmental statement for multiple sites, even when sites are programmatically, geographically and environmentally related, especially when approval of one site is not conditional upon the approval of subsequent sites. *See Kleppe v. Sierra Club*, 427 U.S. 390, 414 (1976). As the Court observed, “an agency can approve one pending project that is fully covered by an environmental impact statement, and then take into consideration the environmental effects

¹² *See* 40 C.F.R. § 1508.7; 10 C.F.R. § 51.14(b) (NRC-specific NEPA regulation) (‘Cumulative impact’ is the impact on the environment which results from the incremental impact of the action when added to other *past, present, and reasonably foreseeable future actions* regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions *taking place over a period of time.*) (emphasis added).

¹³ *Kleppe v. Sierra Club*, 427 U.S. 390, 410 n.20 (1976) (less imminent contemplated actions need not be analyzed); *see also Utahns for Better Transportation v. U.S. Department of Transportation*, 305 F.3d 1152, 1173-74 (10th Cir. 2002) (future additional lanes in highway project need not be considered if only speculative).

¹⁴ *Hydro Resources Inc.*, CLI-01-4, 53 N.R.C. 31, 60 (2001)(a bifurcated licensing proceeding involving multiple sites as coextensive with NEPA’s cumulative impact rubric: “cumulative impacts analysis looks not only to possible . . . ‘synergistic’ effects, but also to whether, *even at just one site*, the proposed action’s impacts will be significantly enhanced by already existing environmental effects from prior actions.”) (emphasis added).

of that existing project when preparing the comprehensive statement on the cumulative impact of the remaining proposals.” *Id.* In contrast, Entergy's consolidated ER presumes that both IP2 and IP3 will be approved and fails to analyze the scenario that only one of the two nuclear power plants may be approved. Certainly, the ER contains no analysis to suggest that relicensing of one unit is contingent on relicensing the other.

Moreover, as the Commission emphasized in *Private Fuel Storage*: “if NEPA requires anything, it is that alternatives be evaluated.” *See Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-05-5, 61 N.R.C. 108, 122, *aff'd*, CLI-05-12, 61 N.R.C. 345 (2005). Neither Staff nor Entergy dispute New York State’s claim that Entergy’s approach grossly distorts consideration of alternatives. Thus, treating the two nuclear generators as one in the ER is not only arbitrary, it violates a fundamental tenet of the NEPA process: a careful analysis of the alternatives to the proposed action.

CONTENTION 5

New York State’s Contention 5 contained detailed allegations and supporting evidence asserting that the LRA’s AMP violates 10 C.F.R. §§ 54.21 and 54.29(a) by failing to provide for adequate inspection and surveillance for corrosion and leaks in buried systems. In response, Entergy and Staff characterize the Contention as focusing on ongoing monitoring, which they assert falls outside the scope of license renewal, relying on a recent order issued in the Pilgrim Nuclear Power Station license renewal proceeding. Staff also labels Contention 5 overbroad and vague, and both Entergy and Staff allege that New York State has failed to establish a genuine

dispute of a material issue of fact or law as required by 10 C.F.R. § 2.309(f)(1)(vi).

New York State respectfully disagrees with Entergy and Staff's description of the contention and reliance on the *Pilgrim* scheduling order. New York State further submits that this contention goes to core issues in 10 C.F.R. Part 54, was submitted in admissible form in the sufficient bases, and establishes a genuine issue of fact or law. New York State also provides a review of the various *Pilgrim* orders to demonstrate the sufficient basis of its contention and explain the genuine issue of law and fact identified by the contention.

A. Scope of the Contention: Part 54, the October 16, 2006 Pilgrim Order, and Subsequent Proceedings

Both Entergy and Staff oppose New York State's Contention 5 citing to a recent scheduling Order issued by a divided ASLB panel in the Pilgrim relicensing proceeding which they mistakenly claim established that monitoring of buried pipes is now beyond the scope of license renewal. Entergy Answer at 49, Staff Response at 35 (citing *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc. (Pilgrim Nuclear Power Station)*, LBP-08-____, 67 N.R.C. ____, ____ (Jan. 11, 2008) (slip op.) [ADAMS ML080110358]). Staff and Entergy's reading of the ASLB's recent January 8, 2008 Order in Pilgrim is overly broad. A careful reading of the Order shows that it does not preclude admission of New York State's detailed contention.¹⁵ To the extent that it does weigh against admission, New York State respectfully

¹⁵ From the outset it is important to note that New York State's contention differs significantly from the contention submitted by Pilgrim Watch, which focused on existing leaks, in that to the limited extent New York State's contention references leaks, it refers to leaks which have yet to occur - leaks which may occur during the period of license renewal - and the

submits that the Pilgrim Scheduling Order was wrongly decided and has no binding effect here.

To the extent the *Pilgrim* proceeding is relevant here, New York State respectfully suggests that the earlier unanimous Pilgrim ASLB decision that admitted an intervenor's contention is the better-reasoned and the more relevant of the *Pilgrim* decisions.

1. *The Board's October 16, 2006 Order Concerning Admission of Pilgrim Watch's Contention One*

In the *Pilgrim* relicensing matter, petitioner-intervenor Pilgrim Watch submitted a contention challenging the minimalist aging management plan in Entergy's license renewal application as providing inadequate inspection of all systems and components that may contain radioactively contaminated water and inadequate monitoring to determine if and when leakage from these areas occurs. *See* Order and Memorandum, Entergy Nuclear Generation Company and Entergy Nuclear Operations, Inc. (Pilgrim Nuclear Power Station) (October 16, 2006), ADAMS ML062890259. Rejecting objections that the contention was outside the scope of license renewal, the Pilgrim ASLB unanimously admitted Pilgrim Watch's contention, finding that some, if not all, buried piping systems are within scope. *Id.* at 60. The Board characterized the contention this way:

Briefly summarized, [Pilgrim Watch] in Contention 1 challenges Pilgrim's aging management program relating to the inspection of buried pipes and tanks for corrosion, and to detection of leakage of radioactive water that might result from undetected corrosion and aging. The essence of the contention is that the aging management plan incorporates no mechanism for early detection of leaks, and

inadequacy of the AMP to detect and remedy such leaks. New York State Contention 5.

should do so, through the use of appropriately placed monitoring wells. The basis for the contention includes two factors: First, the infrequency of inspections for corrosion of relevant pipes and tanks that are underground, viewed in light of recent discoveries of leaks at various nuclear facilities, supported by various factual arguments and sources; and second, the fact that the plan contains no mechanism for monitoring for leaks.

Id. at 60-61. The Board went on to state that it was “obvious” that “the adequacy of the aging management program as it relates to underground pipes and tanks has health and safety significance and is material to whether the license renewal may be granted.” *Id.* at 61. The Board also found that Pilgrim Watch, notably without submitting an expert declaration, had satisfied 10 C.F.R. § 2.309(f)(1)(v). Also notably, the Board paid particular attention to examples of leaks in other nuclear facilities in the United States which had gone undetected. *Id.* at 62. Perhaps most importantly, the Board stated that “the subject of ‘monitoring’ is *not irrelevant merely because some monitoring may be part of operational activities on a continuing basis.*” *Id.* at 64 (emphasis added). The Board limited the contention in two ways, the relevant one being a limitation of the application of the contention to those buried pipes which fall within the scope of 10 C.F.R. Part 54. *Id.* at 66.

2. *The Board’s October 17, 2007 Order Denying Entergy Summary Disposition*

Entergy then moved for summary disposition of Pilgrim Watch’s buried piping contention, arguing again that monitoring is an issue outside the scope of license renewal because it is part of the CLB. *See* Entergy’s Motion for Summary Disposition of Pilgrim Watch Contention 1 (June 8, 2007), ADAMS ML071640454. The Pilgrim Board unanimously denied

this motion, finding that Pilgrim Watch had established the existence of a genuine issue of material fact. *See* Entergy Nuclear Generation Company and Entergy Nuclear Operations, Inc. (Pilgrim Nuclear Power Station) (October 17, 2007), ADAMS ML072900448. The Board went on to state that:

there is a genuine dispute on the central and material issue of whether those Pilgrim aging management programs, or AMPs, that relate to relevant buried pipes and tanks are adequate on their own, without need of any leak detection devices (Intervenors propose monitoring wells), to assure that the pipes and tanks in question will perform their intended functions and thereby protect public health and safety.

Id. at 16 (noting that although the contention did not use specific wording, it implicitly addresses the adequacy of the AMPs to assure that the pipes and tanks perform as intended to perform).

The Board stated that “prevention of an aging-induced leak large enough to compromise the ability of buried piping or tanks to fulfill their intended safety function is indeed a clear goal of an AMP . . . Thus, while leak prevention is not a stated objective, it is an implicit element of . . .

AMPs” which have as an element prevention of corrosion. *Id.* at 17. Whether or not leak detection is a necessary element of the Pilgrim AMP was found to be the genuine issue in

dispute. *Id.* (“Thus, the only issue remaining before this Licensing Board regarding Contention 1 is whether or not monitoring wells are necessary to assure that the buried pipes and tanks at issue will continue to perform their safety function during the license renewal period — or, put another way, whether Pilgrim’s existing AMPs have elements that provide appropriate assurance as required under relevant NRC regulations that the buried pipes and tanks will not develop leaks

so great as to cause those pipes and tanks to be unable to perform their intended safety functions.”).

3. *The Board’s December 19, 2007 Scheduling Order, Pilgrim Watch’s Motion for Reconsideration, and the Separate Statement of Pilgrim ASLB Chair Ann Marshall Young*

On December 19, 2007, the Pilgrim ASLB issued a scheduling order in which it sought to clarify the scope of the admitted contention. It stated that “[o]ngoing monitoring is not within the scope of this proceeding; only challenges to errors or omissions from the Applicant’s Aging Management Program (AMP) are properly within the scope,” and that “[t]he single admitted contention relates to whether or not Applicant’s AMPs are sufficient to enable it to determine whether or not certain buried pipes and tanks are leaking at such great rates that they cannot satisfy their respective intended safety functions.” Entergy Nuclear Generation Company and Entergy Nuclear Operations, Inc. (Pilgrim Nuclear Power Station) (December 19, 2007), ADAMS ML073530511.

On December 21, 2007, ASLB Chair Ann Marshall Young issued a separate statement (in essence, a dissent) outlining her concern with the majority’s ruling that ongoing monitoring is outside the scope of the Pilgrim proceeding. *See* Entergy Nuclear Generation Company and Entergy Nuclear Operations, Inc. (Pilgrim Nuclear Power Station) (December 21, 2007), ADAMS ML073550732. Judge Young stated that:

to exclude any consideration of [monitoring] wells at this point would seem to be inefficient at least, if the question indeed remains open whether Entergy’s existing AMPs *do or do not* ultimately in fact sufficiently *on their own, without the aid of monitoring wells,*

“ensure that such safety-function-challenging leaks will not occur”
and that the buried pipes and tanks at issue will therefore be able to
perform their intended safety functions throughout the term of any
extended license.

Id. at 2. She further stated that such exclusion was inappropriate, and that “[e]vidence relating to
monitoring wells is relevant to the contention and our ultimate ruling on the issue(s) raised in it.”

Id. at 3.

Pilgrim Watch subsequently submitted a motion for reconsideration of this scheduling
order.

4. *The Board’s January 11, 2008 Order*

On January 11, 2008, the ASLB issued a Memorandum and Order denying Pilgrim
Watch’s motion for reconsideration, and further expounding on the issue of the admissibility of
Pilgrim Watch’s buried piping contention. Entergy Nuclear Generation Company and Entergy
Nuclear Operations, Inc. (Pilgrim Nuclear Power Station) (January 11, 2008), ADAMS
ML080110358. The Board stated here that although monitoring is outside the scope of license
renewal,

[n]onetheless, imbedded in Pilgrim Watch’s original contention
was the concept that the application and the Applicant’s AMPs
appear to fail to set out programs which enable the Applicant to
determine whether those buried pipes and tanks containing
radioactive fluids are leaking at such great rates that they would
fail to satisfy their respective safety functions - and that inquiry is
proper subject matter for a challenge to a license extension
application.” *Id.* at 5.

It is clear from the series of Board Orders on this issue that the Board’s January 11, 2008

Order, oft-cited by Staff and Entergy in response to New York State's Contention 5, is not properly applied in the context in which Staff and Entergy have used it. The Board's January 11, 2008 Order does not modify the Board's initial acceptance of Pilgrim Watch's contention, which did not challenge ongoing monitoring. Similarly, New York State's contention does not challenge ongoing monitoring, if any even exists, concerning buried pipes and tanks. To the contrary, New York State asserts that Entergy's prospective AMP for the license renewal term is inadequate in that "(1) it does not provide for adequate inspection of all systems, structures, and components that may contain or convey water, radioactively-contaminated water, and/or other fluids; (2) there is no adequate leak prevention program designed to replace such systems, structures, and components before leaks occur; and (3) there is no adequate monitoring to determine if and when leakage from these systems, structures, and components occurs." New York State Contention 5.

New York State's buried piping contention is clearly aging-management-related and prospectively focused on the license renewal term. New York State's contention differs significantly from the contention submitted by Pilgrim Watch, which focused on existing leaks, in that New York State's contention focuses on leaks which have yet to occur - leaks which may occur during the period of license renewal - and the inadequacy of the AMP to detect and remedy such leaks. Thus, the December 2007 and January 2008 Pilgrim Orders are not on point. Even if they were, New York State urges the Board here to adopt Chair Young's position, and to allow in New York State's valid and in-scope contention as to Entergy's failures to establish aging

management techniques (regardless of what they are called - inspection, monitoring, surveillance, leak detection, or the like) that will prevent the failure of buried piping systems containing radioactive fluids, and therefore prevent the illegal release of radioactive contamination into the environment.

“Issues that concern age-related degradation, such as . . . corrosion . . . are within the scope of a license renewal proceeding.” *In the Matter of Florida Power & Light Co.*, (Turkey Point Units 3 & 4), CLI-01-17, 54 N.R.C. 3, 9 (July 19, 2001)(“*Turkey Point*”) (emphasis added). Moreover, the NRC’s rules “focus[] the renewal review on plant systems, structures, and components for which current [regulatory] activities and requirements may not be sufficient to manage the effects of aging in the period of extended operation.” *Id.*, quoting 60 Fed. Reg. 22,461, 22,481-82 (May 8, 1995).¹⁶ The ASLB accepted a contention in the Oyster Creek relicensing proceeding that was grounded in the same proposition as Contention 5, that the applicant’s license renewal application failed to establish an adequate aging management program to determine the amount of corrosion in critical areas (there, of the drywell liner in the sandbed region; here, in the buried piping system). See Memorandum and Order, *In the Matter of Amergen Energy Company, LLC* (License Renewal for Oyster Creek Nuclear Generating

¹⁶ And of course, monitoring is not in and of itself beyond the scope of a license renewal proceeding, as indicated by the many discussions of monitoring found, in different contexts, in the LRA See LRA A.2.1.3. and B.1.3 (Boraflex Monitoring Program); A.2.1.8 and B.1.9 (Diesel Monitoring Program); A.2.1.16 and B.1.17 (Heat Exchanger Monitoring Program); A.2.1.35 and B.1.36 (Structures Monitoring Program); *et cetera*. See also Order and Memorandum, *In the Matter of Entergy Nuclear Generation Company and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station)(October 16, 2006), ADAMS ML062890259.

Station)(February 27, 2006), ADAMS ML060580677.

B. Basis

Contrary to Staff and Entergy's protests, New York State has established acceptable bases for Contention 5. Despite Staff's pronouncement that Entergy "does employ preventive measures and internal inspections," Staff Response at 37-38, none of the programs listed by Staff address the inadequacies in the LRA raised by New York State's expert, Dr. Rudolph Hausler, who has substantial expertise and experience as to the integrity of buried pipes. For example, Dr. Hausler asserted that the LRA did not require internal inspections. Hausler Affidavit, ¶ 12. Entergy states, without support, that the LRA contains programs for internal inspections of buried pipes, Entergy Answer at 53, but in fact the LRA does not address internal monitoring of *any* internal surface of carbon steel piping. *See generally* LRA. Moreover, Entergy admits in a filing submitted in this proceeding that "[s]ome new activities or program augmentations also may be necessary for purposes of license renewal (*e.g.*, one-time inspections of structures or components)." Entergy Answer to Westchester County at 17. Dr. Hausler has proposed just these kind of program augmentations, including a one-time baseline assessment, which are crucial to the AMP's ability to protect health and safety threats from corroding buried pipes. The GALL Report (Rev. 1, Vol. 1 at 35, 51 and 69) offers further support for New York State's assertion that inspections for buried pipes are part of the AMP and can be evaluated and

challenged in this proceeding.¹⁷ New York State has clearly established a contention, and supporting bases, that alleges inadequacies in the AMP for buried pipes which threaten the safety function of the buried piping system. Similar contentions were admitted in Pilgrim and in Oyster Creek, and New York State's Contention Five should be admitted here.

C. Genuine Issue of Fact or Law

Entergy asserts that there are "many other programs for management of . . . buried systems" in the LRA, Entergy Answer at 52-53, but provides a reference to only one, the Water Chemistry Control-Primary and Secondary Program. This program monitors for water chemistry in certain systems only - - not loss of material in the piping system itself, either internal or external - - and notably does not monitor for the quality of cooling water entering the plant. LRA at Appendix B.1.41. Moreover, Staff disingenuously disavows any correlation between the buried pipe failures at other facilities around the country and New York State's concerns of the

¹⁷ Entergy's conclusory statement that its Aging Management Plan is "consistent with the program recommended by the GALL Report," Entergy Answer at 52, is inaccurate. As the NRC itself has stated, "[i]f an applicant takes credit for a GALL AMP, it is incumbent on the applicant to ensure that the plant AMP contains all the program elements of the referenced GALL AMP. In addition, the conditions at the plant must be bounded by the conditions for which the GALL AMP was evaluated." Audit and Review Plan for Plant Aging Management Reviews and Programs, Indian Point Nuclear Generating Unit Nos. 2 and 3, Docket No. 50-247, 50-286, ADAMS ML072290180. The minimalist AMP presented by Entergy for Indian Point does not meet these requirements. In addition, compliance with GALL is evidence on the issue, not resolution of it. Entergy's time to present evidence on a contention, as it well knows, is after the contention is admitted, not during the contention admission stage. See *Matter of Entergy Nuclear Gen. Co.* (Pilgrim Nuclear Power Station), LBP-06-23, 64 N.R.C. 257, 312-14, 336 (Oct. 16, 2006); *Matter of Entergy Nuclear Vermont Yankee*, ASLBP 04-832-02-OLA, 62 N.R.C. 813 (Slip op. at 14-15)(Dec. 2, 2005).

potential for buried pipe failure at Indian Point. Staff Response at 37. It defies common sense for Staff to assert that buried pipe failures at other aging facilities have no bearing on Indian Point, which has already been in operation — and whose buried systems have been subject to corrosion from brackish intake water among other forces — for decades. Moreover, Dr. Hausler, in his declaration, did more than refer to instances of potentially corrosion-related failures at similarly aging facilities; he cited, based on Entergy’s own information, the instance of a service water pipe failure at Indian Point that, in his expert opinion (based on photographic evidence provided) occurred because of flow-induced corrosion. Declaration of Rudolph Hausler, ¶ 24, Exhibit 3, 14. The examples of leakage offered in Dr. Hausler’s declaration are relevant to Indian Point.¹⁸

Staff inappropriately relies on *Louisiana Energy Services, L.P.*, Staff Response at 36, in favor of disposing of Contention 5 at this stage. Unlike the situation in *Louisiana Energy*, New York State has alleged specific inadequacies of the LRA - particularly, inadequacies as to corrosion prevention and monitoring in the Aging Management Plan, at B.1.6, in buried piping systems. As required by *Louisiana Energy Services, L.P.*, New York State has “directly

¹⁸ In response to Staff’s argument that by referring to “all systems” New York State has put forward an overbroad contention, New York State notes that the ASLB has expressly declined to adopt this view, stating instead that “[w]hile it is true that the contention’s mention of ‘all systems’ . . . may implicate systems and components that are not within the scope of a license renewal as defined in 10 C.F.R. Part 54, such language does not remove the entire contention from the scope of this proceeding.” Order and Memorandum, Entergy Nuclear Generation Company and Entergy Nuclear Operations, Inc. (Pilgrim Nuclear Power Station)(October 16, 2006), ADAMS ML062890259.

controverted the application.” *Louisiana Energy Services, L.P.*, (National Enrichment Facility), LBP-04-14, 60 N.R.C. 40, 57 (2004). This is not the kind of overbroad, generalized contention proscribed by *Louisiana Energy Services, L.P.* Moreover, Staff’s discussion of ongoing monitoring that is allegedly already taking place at Indian Point is irrelevant, because Entergy admits that the AMP for buried piping systems is a “new program.” LRA, B.2.6. It is this AMP, not any past history of monitoring that may or may not have taken place at Indian Point, which New York State challenges here.

Finally, a recently disclosed Entergy document vitiates Entergy and Staff’s criticism of Dr. Hausler contained in their January 22 submission. New York State calls this Board’s attention to a document entitled the *Buried Piping and Tanks Inspection Program and Monitoring Program* (“BTPIMP”), which was submitted by Entergy in the matter of Pilgrim Nuclear Power Station License Renewal proceeding. See Entergy Nuclear Generation Company and Entergy Nuclear Operations, Inc. (Pilgrim Nuclear Power Station), Entergy’s Initial Statement of Position, Exhibit 5, posted January 8, 2008, and docketed January 9, 2008, ADAMS ML080160268. This document confirms the validity of the bases for the contention and the supporting evidence offered by Dr. Hausler, because the BTPIMP addresses many of the issues raised by Dr. Hausler.¹⁹ Moreover, the BTPIMP discredits Staff’s opposition to New York State’s allegedly overbroad list of systems relevant to buried piping, Staff Response at 36, citing

¹⁹ For example, while Entergy attempts to discredit Dr. Hausler’s assertion that a baseline assessment of current conditions is a necessary precursor to any effective Aging Management Plan, Entergy Answer at 53, its own BTPIMP discusses baseline inspections. BTPIMP at 4.

New York State's reference to "all systems, structures, and components that may contain or convey water, radioactively-contaminated water, and/or other fluids") by requiring inspection of the same category of systems ("buried or partially buried piping and tanks that, if degraded, could provide a path for radioactive contamination of groundwater"). See Entergy Nuclear Generation Company and Entergy Nuclear Operations, Inc. (Pilgrim Nuclear Power Station), Entergy's Initial Statement of Position, Exhibit 5, at Attachment 9.3; see also New York State's Contention 5, Basis 3. The State of New York submits that rather than criticize Dr. Hausler, Entergy and Staff should have called the existence of the BTPIMP to the Board's attention and that Entergy also should have filed the BTPIMP document as an amendment to its license application, particularly since the document was dated over a week before initial contentions were due, applies explicitly to Indian Point, and purports to implement an entirely new and much broader buried pipe inspection program than the program contained in the LRA.²⁰

CONTENTIONS 6, 7, AND 8

New York State presented three contentions challenging Entergy's treatment of electrical systems or components in the LRA. New York State Petition, Contentions 6, 7, 8. Each of these contentions provided specific citations to sections of the LRA alleged to be deficient or incomplete and cited various documents – such as a Sandia National Laboratories report prepared for the U.S. Department of Energy and sponsored by DOE and EPRI, a NRC Generic Letter, a

²⁰ If, and when, Entergy implements the procedures identified in the BTPIMP for IP1, IP2 and IP3, New York State will analyze that amendment and determine what if any impact it has on Contention 5 or a possible new contention.

NRC Information Notice, the Sandia/NEPO Final Report on Aging and Condition Monitoring of Low-Voltage Cables, and the GALL Report – that supported New York State’s contentions. New York State’s contentions further explained how the identified deficiencies in the aging management of the electrical systems and components could cause serious impacts to the reactors’ operations. Paul Blanch, a retired nuclear industry executive with electrical engineering experience, submitted a declaration corroborating the three contentions. Blanch Declaration at ¶¶ 3-24.

A. Contention 6: Medium Voltage Cables

New York State’s Sixth Contention asserted that the LRA for IP2 and IP3 does not comply with 10 C.F.R. §§ 54.21(a) and 54.29 because Entergy did not propose a specific or adequate aging management plan for medium voltage cables which are inaccessible and are not environmentally-qualified. New York State Petition at 92-100; Blanch Declaration at ¶¶ 4-16.

The Contention specifically identified the portion of the LRA that was deficient and identified, by reference to relevant portions of a report from Sandia Laboratories and a Generic Letter, why the program identified in the LRA was inadequate. The Contention also alleged that a promise to implement a program, without providing the details of the program to be implemented, is insufficient to meet the requirements of 10 C.F.R. §§ 54.21 and 54.29 because it illegally removes from Board and intervenor review a component of the AMP that Entergy is required to subject to such review.

Staff and Entergy oppose the admissibility of the Contention partly because they

mischaracterize the Contention, partly because they ignore New York State's specific references to the LRA and supporting material, and partly because they mistakenly believe that there cannot be an admissible contention based on a disagreement with a Staff or industry "guidance" document even where that disagreement relies on other authoritative sources, including a research laboratory report, a Staff Generic Letter, safety incidents at other nuclear plants that illustrate the aging risk, and expert declaration. Finally, and remarkably, Staff insists that just because the LRA does not have the required AMP does not mean it will not have such an AMP at some time in the future and thus no Contention can be based on the absence of required data from the LRA. As discussed below, none of the objections have merit and none justify rejection of Contention 6.

At the outset, New York State accurately described Entergy's proposed aging management program for Non-EQ, Inaccessible, Medium Voltage Cables as limited to testing cables once every 10 years to determine the condition of the cables' insulation and looking in manholes every 2 years to determine if water has accumulated in cable raceways. New York State Contention at 94 (*quoting* LRA B.1.23). Entergy's LRA states that this will be "a new program" that "*will be* implemented prior to the period of extended operation" and "*will be* consistent with the program attributes described in NUREG-1801, Section XI.E3." *See* LRA B.1.23, p. 81 (emphasis added). The LRA did not contain a copy of the actual aging management plan for Non-EQ, Inaccessible, Medium Voltage Cables.

Entergy mistakenly claims that the contention does not have an adequate basis or support.

Entergy Answer at 57. Specifically, in support of this contention, New York State alleged that the failure to manage properly the aging of such Non-EQ Inaccessible Cables could threaten the integrity of: (1) the reactor coolant pressure boundary; (2) the capability to shut down the reactor and maintain it in a safe shutdown condition; or (3) the capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposures comparable to those referred to in 10 C.F.R. §§ 50.34(a)(1), 50.67(b)(2), or 100.11. New York State Petition at 92-3. New York State alleged that the failure to manage properly aging of the Non-EQ Inaccessible Medium-Voltage Cables could result in the loss of the 6.9 kV and 13.8 kV safety related buses that supply emergency power to the 480 volt safety equipment including Station Blackout loads, service water motors/pumps, safety injection pumps. New York State Petition at 93.²¹ New York State further alleged that Entergy had failed to identify the location and extent of Non-EQ inaccessible cable within IP2 and IP3 or to attach or produce various documents (such as EPRI analyses) that were referenced in the LRA but are not readily available. New York State Petition at 93-4.

Additionally, New York State claimed that Entergy's April 30, 2007 LRA did not include a "Non-EQ Insulated Cables and Connections Program," although it did contain a brief summary

²¹ *Accord Turkey Point*, 54 N.R.C. at 4 (“[A]ge-related degradation can affect a number of reactor and auxiliary systems, including . . . electrical cables. . . Left unmitigated, the effects of aging can overstress equipment, unacceptably reduce safety margins, and lead to the loss of required plant functions, including the capability to shut down the reactor and maintain it in a shutdown condition, and to otherwise prevent or mitigate the consequences of accidents with a potential for offsite exposures.”).

of such a program. New York State Petition at 94, 95, 96.²² New York State further alleged that the LRA bypassed the numerous recommendations concerning aging cables contained in: a report prepared by Sandia National Laboratories entitled *Aging Management Guideline for Commercial Nuclear Power Plants – Electrical Cables and Terminations* (SAND96-0344), a generic letter issued by NRC entitled *Inaccessible or Underground Power Cable Failures That Disable Accident Mitigation Systems or Cause Plant Transients* (NRC Generic Letter 2007-01, February 7, 2007), an information notice issued by NRC entitled *Submerged Safety-Related Electric Cables* (NRC Information Notice 2002-12, March 21, 2002), and Brookhaven National Laboratory report entitled *Insights Gained from Aging Research* (NUREG/CR-5643 (March 1992)). New York State Petition at 94-99. Among other things, New York State specifically noted that Section 6 of the Sandia Report contains 18 pages of recommendations and conclusions as to aging management for cables and terminations and that the LRA did not incorporate those recommendations. New York State Petition at 95-96 (discussing SAND96-0344). That section discusses various failure mechanisms such as exposure to high temperatures, mechanical stress, exposure to corrosive/chemical environments, and frequent or continuous loading at capacity – as well as water infiltration. SAND96-0344 at 6-2, 6-13. Finally, New York State alleged that

²² As is clear from the text of the LRA, the proposed Non-EQ Insulated Cables and Connections program focuses on accessible cables. See LRA B.1.25 (“A representative sample of *accessible* insulated cables and connections within the scope of license renewal will be visually inspected . . .”). Like the proposed program for Non-EQ, Inaccessible, Medium Voltage Cables, Entergy’s proposed Non-EQ Insulated Cables and Connections program “is a *new* program” that will be developed. Compare LRA B.1.23 with B.1.25; accord Staff Response at 40-41.

Entergy's summary of the AMP for such aging, Non-EQ, inaccessible cables did not incorporate the lessons learned about such cables contained in the GALL Report, NUREG-1801, Vol. 2, Rev. 1, at XI.E-7. New York State Petition at 99-100. Notably, Staff does not dispute the substance of the factual allegations presented by New York State. *See* Staff Response at 39-41.

Indeed, Staff acknowledges that "the actual AMP has not been submitted." Staff Response, p. 40, line 2. However, Staff proceeds to argue that New York State has engaged in speculation because there is no aging management program for such cables. *Id.*, lines 3-4. Thus, in Staff's view, Entergy may proceed with a LRA that does not contain an actual and detailed aging management program for Non-EQ, Inaccessible Medium Voltage Cables so long as Entergy says that some such program will be developed at some future date – presumably before the Commission renews the license. *Id.* at 39-40.

This Staff position is inconsistent with the position taken recently by the Staff in the Vermont Yankee license extension proceeding. *See* September 26, 2007 Summary of Telephone Conference between Staff and Entergy at Enclosure 2 ("in the LRA the applicant made commitments to perform evaluations of TLAAs two years prior to entering the period of extended operation. The staff's position is that what the analyses have to demonstrate has to be part of the LRA in order for the applicant to be in compliance with 10 CFR 54.21(c)(1)."). In short, an applicant is not allowed to meet the requirements of Part 54 by merely referencing some future program that is not detailed in the LRA.

Despite Staff's attempts to support Entergy on this issue, those efforts simply underscore

the fact that Entergy's April 30, 2007 LRA contains no substantive detail about the contents of an Aging Management Plan for Non-EQ Inaccessible Medium Voltage Cables. For example, although Entergy represents, LRA B.1.23, that inaccessible medium voltage cables "will be tested at least once every ten years" that does not specify exactly what type of test will be performed. The Commission's regulations, 10 C.F.R. § 2.309(f)(1)(vi), as well as the due process clause establish that Entergy cannot terminate New York State's well-pled contention at this juncture simply by incanting the words "to be developed." See New York State Petition at 39-42. The Board should accept New York State's contention and require Entergy to present a comprehensive and detailed aging management program for Non-EQ Inaccessible Medium Voltage Cables.

Staff misunderstands New York State's reason for referencing the LRA's summary of a proposed program for accessible cables entitled "Non-EQ Insulated Cables and Connections Program." Staff Response at 40-41 (citing New York State Petition at 94). The State's purpose in citing to that program's summary is that Entergy includes visual inspections of such *accessible* cables for anomalies, thus, underscoring the deficiency and weakness of Entergy's ambiguous plan to manage *inaccessible* cables, which does not include visual inspections or any alternative inspection. New York State Petition at 95-97.

Entergy's additional objections to Contention 6 similarly lack merit. Entergy mistakenly asserts that the LRA does identify the "location and extent" of Non-EQ Inaccessible Medium Voltage Cables. See Entergy Answer at 57 (citing LRA section 2.5 and Table 2.5-1), *id.* at 60.

Entergy simply is wrong, and the State invites the Board to review the two pages of the LRA cited by Entergy. LRA page 2.5-2 simply lists various classes of cables, one of which is “inaccessible medium-voltage (2 kV to 35 kV) cables (e.g., installed underground in conduit or direct buried) not subject to 10 CFR 50.49 EQ requirements.” Likewise, Table 2.5-1, LRA page 2.5-4, lists “Inaccessible medium-voltage (2KV to 35KV) cables not subject to 10 CFR 50.49 EQ requirements” to indicate that the class of cables was subject to Aging Management Review. Those pages do not identify the location and the extent of Non-EQ Inaccessible Medium Voltage Cables.

Entergy argues that the Board should dismiss Contention 6 because the State of New York has not demonstrated that the AMP does not comply with NRC guidance. *See* Entergy Answer at 58-61. Entergy also repeatedly argues the converse, *i.e.*, that the AMP in LRA section B.1.23 is consistent with GALL section XI.E3. The Board should reject this argument. First, this argument mistakenly assumes that NRC guidance documents somehow have the force of duly-promulgated federal regulations. Guidance documents have no such force. *See Duke Energy Corp.* 58 N.R.C. 221, 240-41. Moreover, New York State has contested the adequacy of the summary of the AMP in LRA section B.1.23 for, among other things, failing to address the several specific recommendations contained in SAND96-0344 and failing to justify differences between managing accessible and inaccessible cables. Petition at 94-97; Blanch Declaration ¶¶ 11-13, 16. Furthermore, New York State’s Petition referenced NRC Generic Letter 2007-01, *Inaccessible or Underground Power Cable Failures that Disable Accident Mitigation Systems or*

Cause Plant Transients, which identified various aging phenomenon and programs that can be used to address the progressive degradation of aging inaccessible cables. New York State Petition at 97-98. New York State further alleged that Entergy's proposed AMP did not incorporate the programs identified by Staff in the Generic Letter and Entergy does not – and given the text of LRA section B.1.23 cannot – dispute this allegation.

Entergy's claim that New York State did not provide any basis for the allegation is dispelled by the Declaration of Paul Blanch, an electrical engineer with over 25 years of experience in the nuclear industry, which states, among other things, "the failure to properly manage aging of Non-EQ In-accessible Medium-Voltage Cables could result in the loss of the 6.9kV and 13.8kV safety related buses that supply emergency power to the 480 volt safety equipment including Station Blackout (SBO) loads, service water motors/pumps, safety injection pumps, and other electrical loads..." See Blanch Declaration at ¶ 4-5. Entergy perhaps may disagree with factual predicate of the Contention or the opinion offered by Mr. Blanch, but those disagreements cannot support the dismissal of the Contention at this juncture. Although there may subsequently be disputes "about the extent to which various items of evidence are relevant and do or do not establish various facts," a petitioner is not "required to prove alleged facts at the contention admissibility stage." *Matter of Entergy Nuclear Gen. Co. (Pilgrim Nuclear Power Station)*, LBP-06-23, 64 N.R.C. 257, 312-14 (Oct. 16, 2006); *id.* at 336 ("The merits of these arguments will be tested at future points in the adjudication process; but the merits cannot be considered at this point.").

Entergy next argues that “Petitioner’s claim [regarding the relationship between the 6.9kV and 13.9kV buses and 480 volt safety equipment] is factually incorrect,” Entergy Answer at 58, but as it surely knows from first hand experience, these arguments are entirely improper. “Entergy’s responses go to the merits and only confirm that there are genuine disputes on these material issues of fact and law.” *Matter of Entergy Nuclear Vermont Yankee*, ASLBP 04-832-02-OLA, 62 N.R.C. 813, 824 (Dec. 2, 2005). Moreover, in response to Entergy’s “factual” argument, the State of New York notes that LRA Table 2.2-1b-IP2/IP3 indicates that 6.9kV cables are within the scope of 10 C.F.R. Part 54 and that LRA page 2.3-137 states that “The SBO/Appendix R diesel generator can supply the safe shutdown loads through the 6.9 kV distribution and the emergency 480 V buses and motor control centers or the turbine building switchgear and motor control centers.”

Entergy implies, Entergy Answer at 59, that Contention 6 seeks to challenge the CLB. It does not. To the extent that the Contention mentioned the CLB, it did so in the context of an allegation that Entergy’s deficient AMP for medium voltage cables precluded Entergy from demonstrating that systems, structures and components could be maintained with the CLB during the period of extended operation. New York State Petition at 93. Contention 6 alleged that the failure of Non-EQ Inaccessible Medium Voltage Cables could negatively impact the intended operation of safety equipment, which, in turn, could result in a beyond-design-basis accident. New York State Petition at 93; Blanch Declaration ¶¶ 5-7.

Contention 6 alleged that two documents relied on by Entergy were not publicly

available. New York State Petition at 93-4 (referencing EPRI TR-103834-P1-2 and EPRI TR-109619). Entergy states that the first is not referenced in the LRA. Yet there is no dispute that it is referenced on page XI.E-7 of the GALL Report, a document on which the LRA expressly relies. Further, Entergy does not contest that TR-103834 is not available. As to the second document, Mr. Blanch could not locate it during the preparation of the New York State Petition using normal ADAMS search methods.²³ Following Entergy's provision of the ML Accession Number for document, New York State obtained TR-109619; however, it does not appear to specifically address inaccessible cables as a class.

Entergy correctly identifies Table 6 of the GALL Report as applicable to medium voltage cables. Entergy Answer at 59.²⁴ That table, entitled "Summary of Aging Management Programs for the Electrical Components Evaluated in Chapter VI of the GALL Report," is cross-referenced in Entergy's LRA at Appendix B.1.23. Those LRA pages, however, contain a summary of the new, proposed AMP for Non-EQ Inaccessible Medium Voltage Cables – the very program that New York State alleged is inadequate. Far from demonstrating that Contention 6 is inadequate as a matter of law, Entergy's repetitive discussion of LRA Appendix B.1.23 and GALL section XI.E3 (*see* NUREG-1801, Vol.2, Rev. 1, page XI.E-8) simply confirms that a genuine dispute exists between it and New York State.

²³ New York State notes that ADAMS encountered various technical difficulties during the Fall of 2007.

²⁴The Petition incorrectly identified this table as "Table 1"; it is, in fact, "Table 6."

B. Contention 7: Low Voltage Cables and Wiring²⁵

New York State's seventh Contention asserted that the LRA for IP2 and IP3 does not comply with 10 C.F.R. §§ 54.21(a) and 54.29 because nowhere in the LRA did Entergy propose an aging management program for non-environmentally qualified inaccessible low-voltage cables. New York State Petition at 100-103; *see also* Blanch Declaration at ¶¶ 17-20.

Entergy again questions the bases and support for the Contention. Entergy Answer at 64-65. New York State asserted, and the UFSAR confirms, that numerous inaccessible low-voltage cables exist in IP2 and IP3 and that those cables provide power and control for the following vital components:

- Auxiliary component cooling pumps;
- Safety injection pumps;
- Residual heat removal pumps;
- Nuclear service water pumps;
- Containment air recirculation cooling fans;
- Auxiliary feedwater pumps;
- Spray pumps (if start signal present); and
- Service water pumps.

New York State further alleged that the failure to properly manage the aging of Non-EQ

²⁵ Low-voltage cables have an operating voltage of less than 2 kV. New York State Contention 7, ¶ 4. New York State Petition at 101.

Inaccessible Low-Voltage Cables may adversely impact: (1) the integrity of the reactor coolant pressure boundary; (2) the capability to shut down the reactor and maintain it in a safe shutdown condition; or (3) the capability to prevent or mitigate the consequences of accidents which could result in potential offsite exposures comparable to those referred to in 10 C.F.R. §§ 50.34(a)(1), 50.67(b)(2), or 100.11. Lack of proper management of such low voltage cables also may result in the loss of emergency power to the 480 volt safety equipment including all Station Blackout loads. New York State Petition at 102.

The State noted that testing conducted by Sandia National Laboratories confirmed that some low-voltage cables are capable of substantial aging as a result of heat, radiation, and other environmental factors present in the reactor. New York State Petition at 103; *see also* SAND096-0344 at Table 4-18. New York State also referenced the *Nuclear Energy Plant Optimization Final Report on Aging and Condition Monitoring of Low-Voltage Cable Materials* (“*NEPO Report*”) that recognized: “Each plant has a different aging environment containing different cables materials, different hot spots and different accessibility points for examining their cables.” New York State Contention 7, ¶ 9, *quoting NEPO Report*, Sandia National Laboratories, SAND2005-7331 (November 2005). The *NEPO Report* further recognized various techniques to monitor the range of different aging cable materials in different aging environments, such as oxidation testing (or modulus profiling), Nuclear Magnetic Resonance (“NMR”) profiling, and carefully controlled tests of a wire’s jacket or insulation. New York State Petition at 102-103. These measures are not discussed in the LRA.

Staff did not contest New York State's factual allegation that the LRA did not contain a specific aging management program for Non-EQ Inaccessible Low-Voltage Cables, that IP2 and IP3 rely on such inaccessible low-voltage cables for several safety related systems, and that the failure to properly manage the aging of such cables could compromise the safe and reliable operation of the two reactors. Staff Response at 42-44. Rather, Staff and Entergy argue that New York State has not demonstrated that a genuine dispute exists as to a material issue of law or fact on this point. Staff Response 43-44; *see also* Entergy Answer at 65-66. As discussed below, Staff and Entergy's arguments miss the mark.

Entergy's first response is that "low voltage cables are fully addressed by the LRA." Entergy Answer at 65. Entergy then acknowledges - - as it must - - that LRA § 2.5 and Appendix B.1.25 do not use the term "low voltage" in describing the class of cables addressed by the respective AMR or AMP. Entergy Answer At 65-66. Tellingly, in describing LRA § 2.5, Entergy states: "this section specifically identifies 'medium-voltage' and 'high-voltage' components, and not low voltage components." Entergy Answer at 65 (footnote citation omitted). Thus, Entergy's position is that when the Board sees the terms "high voltage cables" and "medium voltage cables" it should assist Entergy by adding in the class of "low voltage cables." Entergy's argument that low voltage cables are somehow included is an assertion supported by nothing more than rhetoric of its counsel. Entergy spent many months carefully preparing the LRA. Entergy plainly understands the distinction among "high voltage," "medium voltage," and "low voltage" cables, and the LRA demonstrates that it knows how to use those

precise terms when it intends to do so. Indeed, throughout the LRA, Entergy intentionally distinguishes between “high voltage” and “medium voltage” cables, and in discussing cable connections it even refers to “low voltage” cables. *See, e.g.*, LRA, p. B-78 (discussing cable connections); *see also* GALL Report, NUREG 1801, Vol. 2, Rev. 1, VI A-1. If it wishes to include low voltage cables within the proposed AMP, it should amend the document to unambiguously reflect their inclusion.

Such an amendment however, would not completely address New York State’s Contention, which addressed *inaccessible* cables. Entergy’s and Staff’s reliance on LRA Appendix B.1.25 and GALL, NUREG-1801, XI. E1, Entergy Answer at 66, does not advance their cause since that provision applies to *accessible* cables, and, moreover, it is not finalized. The shortcomings of this proposed program, “Non-EQ Insulated Cables and Connections Program,” which were discussed with respect to Contention 6 (above) are applicable also to Staff and Entergy’s objections to Contention 7. First, as Staff has conceded (both in connection with Contention 6 and here as well), the “Non-EQ Insulated Cables and Connections Program” has not yet been finalized. *Id.* at 41 (“the LRA states that the new program *will be* consistent with the Program described in NUREG-1801”), *accord id.* at 43 (emphasis added). Moreover, as described by Entergy (and Staff), that program will involve an analysis of a “sample of *accessible* insulated cables and connections.” LRA B.1.25; Staff Response at 43. That is no answer to New York State’s straightforward contention about inaccessible cables since elsewhere Staff has sought to underscore the difference between accessible and inaccessible cable programs. Staff

Response at 40-41.²⁶ Moreover, while Staff and Entergy suggest that Entergy's "Non-EQ Insulated Cables and Connections Program" might cover inaccessible cables, Staff Response at 43; Entergy Answer 65-66, NUREG 1801 XI.E1 plainly states that the program "applies to *accessible* electrical cables."

Staff's second and final argument centers on the fact that the Standard Review Plan and GALL "do not address a separate program for inaccessible low voltage cables." The fact that neither of those documents address the contours of an aging management program for Non-EQ, inaccessible, low-voltage cables is of no moment here, since GALL, like other Staff guidance documents is merely evidence, not binding authority. *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), CLI-74-40, 8 A.E.C. 809, 811 (1974); *see also Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), LBP-03-17, 58 N.R.C. 221, 240-41 (2003); *International Uranium (USA) Corp.*, CLI-00-1, 51 N.R.C. 9, 19 (2000); *Curators of the University of Missouri*, CLI-95-1, 41 N.R.C. 71, 150 (1995). Moreover, New York State's contentions, which were tailored to the unique Indian Point facilities at issue in this proceeding, alleged that IP2 and IP3 rely on numerous inaccessible low-voltage cables to operate several critical systems. Accordingly, by alleging the absence of an aging monitoring program for Non-EQ, inaccessible, low-voltage cables New York State has

²⁶ In questioning New York State's reference to "Non-EQ Insulated Cables And Connections Program" as part of its Contention 6, Staff wrote "[i]ts claim that the Applicant failed to provide its Non-EQ Insulated Cables And Connections Program provides no support to Contention 6, because the contention concerns a *different* program." Staff Response at 40-41 (emphasis added, reference omitted).

demonstrated the existence of a genuine dispute as to a material issue of law and fact.

C. Contention 8: Electrical Transformers

Contention 8 alleged that Entergy's LRA did not include an aging management program for each electrical transformer whose function is important for plant safety. New York State Petition at 103-105. New York State alleged that electrical transformers perform functions that fall within the scope of 10 C.F.R. § 54.4(a)(1), (2), (3) and are important for plant safety. New York State Petition 104; Blanch Declaration at ¶¶ 21-24. Having recognized that transformers were not specifically included or excluded within the systems, structures, or components listed in 10 C.F.R. § 54.21(a)(1)(I), New York State alleged that transformers function without moving parts or without a change in configuration or properties and thus meet the functional requirements of systems for which aging management programs may be required. New York State further alleged that the failure to manage properly aging of electrical transformers may compromise: (1) the integrity of the reactor coolant pressure boundary; (2) the capability to shut down the reactor and maintain it in a safe shutdown condition; or (3) the capability to prevent or mitigate the consequences of accidents, which could result in potential offsite exposures comparable to those referred to in 10 C.F.R. §§ 50.34(a)(1), 50.67(b)(2), or 100.11. New York State additionally alleged that the failure to manage properly the aging of electrical transformers could result in loss of emergency power to the 480 volt safety equipment and 6.9kV busses, including all station blackout loads and may result in accidents beyond the Design Basis Accidents resulting in exposures to the public exceeding 10 C.F.R. § 100 limits. New York State

Petition at 104.

Staff does not dispute New York State's factual allegations; rather, Staff argues that the Board should rule that transformers are not within the scope of 10 C.F.R. § 54.21(a)(1)(I). In support of its argument to exclude transformers, Staff cites to its own Standard Review Plan in which Staff interpreted 10 C.F.R. § 54.21(a)(1)(I) as not requiring Staff or the applicant to perform an aging management review of any transformers. Staff Response at 45 (citing NUREG-1800, Rev. 1, at 2.1-23). However, NRC case law confirms that Staff's interpretation is not binding on this Board. *See Duke Energy Corp.*, 58 N.R.C. at 240-41. Given the importance of transformers for plant safety as described in the Contention, it is difficult to see how the Staff can defend its position before this Board. In addition, even Entergy agrees that "IP2 and IP3 transformers that are safety-related or are necessary for compliance with 10 C.F.R. §§ 50.48 and 50.63 are within the scope of license renewal." Entergy Answer at 69.

Staff and Entergy also contest New York State's citation to a Draft Request for Additional Information ("DRAI") issued to Entergy from Staff as part of its review of the Indian Point LRA. As part of its contention, New York State cited to a September 21, 2007 telephone conference conveying a DRAI to Entergy in which Staff stated:

For purposes of the license renewal rule, the staff has determined that the plant system portion of the offsite power system that is used to connect the plant to the offsite power source should be included within the scope of the rule. This path typically includes switchyard circuit breakers that connect to the offsite system power transformers (startup transformers), *the transformers themselves*, the intervening overhead or underground circuits between circuit breaker and transformer and transformer and onsite electrical

system, and the associated control circuits and structures. Ensuring that the appropriate offsite power system long-lived passive structures and components that are part of this circuit path are subject to an AMR [Aging Management Review] will assure that the bases underlying the SBO requirements are maintained over the period of extended license.

(emphasis added). As Staff notes,²⁷ the DRAI went on to say:

According to the above, both paths, from the safety-related 480 Volt (V) buses to the first circuit breaker from the offsite line, used to control the offsite circuits to the plant *should be age managed*. The guidance does not specify that the switchyard is not part of the plant system nor that the switchyard does not need to be included in the scope of license renewal. Explain in detail which high voltage breakers and other components in the switchyard will be connected from the startup transformers up to the offsite power system for the purpose of SBO recovery.

October 16, 2007 Memorandum Confirming September 21, 2007 DRAI, p.10 (emphasis added).

Staff suggests that New York State confused the concepts of AMR with an AMP, Staff Response at 45-46. New York State acknowledges that AMR and AMP concern different license renewal activities under Part 54. However, for the purposes of Staff's objections to New York State's Contention 8, it is a distinction without a difference because the DRAI indicates that switchyard transformers and their larger electrical pathway are within the scope of an aging management review and are "within the scope of the [license renewal] rule." Thus, the Board should reject the

²⁷ See Staff Response at 46, n. 45 quoting Summary Of Telephone Conference Call Held On September 21, 2007, Between The U.S. Nuclear Regulatory Commission And Entergy Nuclear Operations, Inc., Concerning Draft Requests For Additional Information Pertaining To The Indian Point Nuclear Generating Unit Nos. 2 And 3, License Renewal Application, (Oct. 16, 2007) (ADAMS ML072770605) at 10 (emphasis added).

arguments put forth by Staff and Entergy that electrical transformers whose functions are important to plant safety are outside the scope of Rule 54.

CONTENTIONS 9, 10, AND 11

In these three related contentions New York State challenges the adequacy of the ER's analysis of the benefits and costs of the "no action" alternative focusing on the ER's dismissal, which contain virtually no analysis of energy conservation and renewable energy resources and no consideration of the substantial available information on these options and their feasibility, the ER's failure to even consider alternatives such as transmission line up grades and re-powering of existing facilities, and the ER's failure to consider that one of the benefits of the "no action" alternative and that one of the costs of approval of the project is the impact of that decision on the development and implementation of environmentally preferable energy options, including energy conservation and renewable energy resources.

In opposing all three of the Contentions, and in opposing Contentions 9 and 11, Entergy and Staff (respectively) focus on what they perceive to be controlling NRC regulations and relevant case law that narrowly limit the scope of the consideration of alternatives and their impacts, while ignoring equally relevant NRC regulations regarding the appropriate treatment for the "no action" alternative. Both the regulations and relevant case law mandate that contentions that challenge the narrow focus in the ER and its meager analysis of alternatives in the "no action" analysis are to be accepted where, as here, the contentions are supported by substantial bases and supporting evidence.

Citing selectively to the 1996 GEIS, both Entergy and Staff claim that the scope of consideration of alternatives must be limited to a single alternative that would, in and of itself, meet the generating capacity of the combined IP2 and IP3 units and that the only non-nuclear alternatives that are to be considered are coal and natural gas fueled facilities. Tellingly, they ignore the portions of the GEIS, cited in the New York State Petition, which indicate that, when considering the “no action” alternative, the ER must provide a detailed analysis of renewable energy resources and energy conservation. New York State Petition at 107-08. These analyses are to include a detailed examination of the cost and benefits of the reasonably likely consequences of the “no action” alternative. The ER limits its analysis of the consequences of the “no action” alternative to an extended discussion of the adverse impacts of coal or gas fired generation capacity and gives only the most cursory examination of renewable energy resources, ignoring a wealth of studies and analyses by energy experts, federal agencies, and other governmental entities demonstrating the feasibility and environmental advantages of many energy alternatives, including energy conservation.²⁸

Since both sets of statements appear in the GEIS, it is obvious the Commission intends both directives be followed. The “no action” alternative eliminates all of the adverse impacts of

²⁸ The ER makes vague and unsupported assertions such as this: “The environmental impacts of an energy conservation program would be SMALL, but the potential to displace the entire generation at the site solely with conservation is not realistic. Therefore, the conservation option by itself is not considered a reasonable replacement for the IP2 and IP3 Operating License renewal alternative.” ER at 8-56. In contrast, New York State’s contention provides bases and factually supported analysis to the contrary. See Schlissel Declaration at ¶ 6; Schlissel, Report on the Availability of Replacement Capacity and Energy for Indian Points Units 2 & 3.

license renewal (discussed in the ER at Chapters 4 and 6) and those alternative steps that may be taken if that occurs. The GEIS directs that those alternatives be examined, including their costs and benefits. Contentions 9 and 10 challenge Entergy's assertion of what those alternative steps will be, how effectively they will function, and the impacts they will create. Substantial supporting evidence demonstrates the extent to which the ER has failed to fully analyze these alternative steps. Contention 11 challenges the failure of the ER to consider an additional adverse impact of the proposed action - *i.e.*, the adverse impact on the development and implementation of environmentally preferable energy options, including conservation, renewable energy resources, load management, transmission line improvements and re-powering of existing non-nuclear facilities, if IP2 and IP3 remain as energy options after 2013 and 2015.

Entergy focuses much of its attention on the ASLB decision *In the Matter of Nuclear Management Company, LLC*, (Monticello Nuclear Generating Plant) 62 N.R.C. 735 (2005) where, after ruling that the intervenor had no standing to participate in the proceeding, the Board, *in dicta*, also found that the intervenor's contention based on the failure to consider energy alternatives, was unacceptable. The basis for that conclusion was not, as Entergy implies, because such contentions are inherently inadmissible, but instead was based expressly on the failure of the intervenor to provide any substantial supporting evidence for its contention:

NAWO's discussion of proposed C-BED projects does not, however, provide any specific information to assess the extent of the program, its specific mission and authority, or its potential effectiveness in developing alternative energy sources. In proposing C-BED projects, NAWO does not provide any factual information or expert opinion that supports the potential for

wind/biofuel combustion hybrid facilities to provide for the loss of baseload capacity provided by the MNGP should the license not be renewed.

NAWO implies only that the application is inadequate because the ER failed to consider C-BED options, which will be "dominated by wind/bio-fuel combustion hybrid facilities." While the Applicant presented numerous alternatives in its ER, including wind and biomass options, NAWO fails to identify any specific error in NMC's discussion of these alternatives and has, therefore, failed to raise a genuine issue with regard to any material fact or law as required by the regulations. 10 C.F.R. § 2.309(f)(1)(vi). With regard to the alleged omission of an appropriate discussion of C-BED options, NAWO's contention is not supported by facts or expert opinion and is too speculative to raise a genuine issue of law or fact.

Id. at 752, 753-4 (footnotes omitted). In contrast, Contentions 9-11 contain substantial evidence of specific feasible options that could be implemented and which would more than replace power that might be produced by IP2 and IP3. New York State Petition at 110-19, 123-37, Peter Bradford Declaration at 3-6; Schlissel Report at 17. For example, the National Academy of Scientists Panel, referred to in the Schlissel Report at 17, on alternatives to extended operation of IP2 and IP3 concluded:

A wide and varied range of replacement options exists, and if a decision were definitely made to close all or some part of Indian Point by a date certain, the committee anticipates that a technically feasible replacement strategy for Indian Point would be achievable

Alternatives to the Indian Point Center for meeting New York Electric Power Needs, National Research Council, June 2006 at 3. In addition, New York State's expert has conducted a careful

analysis of how these alternatives would meet the load that IP2 and IP3 are intended to meet, including analyzing their role as base load units²⁹ and the service area which primarily depends upon them. Schlissel Report at 3-12 attached to his Declaration. Thus, in no way are the Contentions here subject to the criticism that formed the basis for the conclusion in *Monticello*.

In citing to *Monticello*, Entergy focuses on selected portions and citations from that case to support its view that the only alternatives that are to be considered are those that will meet the goal of the proposal, as defined by Entergy. However, *Monticello* recognized that there are two parts to the alternatives analysis, only one of which is cited by Entergy in its answer here:

The Commission need only consider the range of alternatives
"reasonably related' to the scope and goals of the proposed action"
(which, for MNGP, is to provide baseload generating capacity) *and*
the "no-action" alternative.

Id. at 753 (footnotes omitted; (emphasis added). Entergy's answer overlooks the analytical requirements of the "no action" alternative. Likewise, it is within the context of consideration of the "no action" alternative that Entergy's ER is primarily deficient. Entergy's reliance on the GEIS and the distinguishable dicta in *Monticello* while ignoring the requirements for considering the "no action" alternative, is thus insufficient to place Contentions 9-11 outside the scope of a

²⁹ It is somewhat misleading to assume that Indian Point is a base-load facility that operates on all the time in light of its history of planned and unplanned shutdowns, each one of which necessitated reliance on other sources of generation, which on each instance were available. See generally Schlissel Report at 3-4; New York State Contention at 111; *Consolidated Edison Co. v. Pataki*, 292 F.3d 338, 343 (2d Cir.), cert. denied, 537 U.S. 1045 (2002)(describing February 2000 IP2 steam tube crack that idled the reactor for 11 months and ConEd's purchase of replacement power from other sources.)

license renewal ER obligation.³⁰

The GEIS states that the overall purpose of the major federal action involved here:

is to provide an option that allows for power generation capability beyond the term of a current nuclear power plant operating license in order to meet future system generating needs as such needs may be determined by state, utility, and, where authorized, federal (other than NRC) decision makers.

GEIS at §8.1. Entergy agrees:

the purpose and need of the “major federal action” which falls under the umbrella of NEPA is the determination by the NRC to “provide an option that allows for power generation capability beyond the term of a current nuclear power plant operating license”

Entergy Answer at 74 (citation omitted). However, despite giving lip-service to the real purpose of the relicensing proposal, as articulated in the GEIS (“to provide an option that allows for power generation capability beyond the term of a current nuclear power plant operating license to meet future system generating needs, as such needs may be determined by State, utility, and, where authorized, Federal (other than NRC) decision makers” *id.* at § 8.1), Entergy's entire

³⁰ Entergy also asserts that where, as here, the proposed action is either approval or denial of the request of a private party to engage in certain action, the government agency “should accord substantial weight to the preferences of the applicant and or/ [sic] sponsor”. Entergy Answer at 76, 77-8. It relies on footnote 83 of *Monticello* which in turn relies on the decision in *Citizens Against Burlington, Inc. v. Busey* 938 F.2d 190, 197, (D.C. Cir. 1991). *Burlington* does not say that an agency “should” accord substantial weight to the applicant’s choice but that it “may” do so. *Id.* at 197 (“the Federal government's consideration of alternatives may accord substantial weight to the preferences of the applicant and/or sponsor in the siting and design of the project.”). As noted in the following discussion, this is not a trivial distinction since the more authoritative view is that the environmental analysis cannot be limited to an unreasonably narrow view of the proposed project as it would violate the NEPA mandate to fully consider alternatives.

analysis of alternatives is driven by a different and severely restricted purpose (“the production of approximately 2,158 MWe of base-load generation”), ER at 8-1; Entergy Answer at 76.

Entergy’s restrictive view of the purpose of the relicensing proposal produces a very different perspective on the relevant energy alternatives than the NRC’s determination of the real purpose of relicensing. Because the purpose of the relicensing proposal is to decide whether to provide another energy option following expiration of the current licensing term, it is essential to evaluate the existing available options, including energy conservation initiatives, renewable energy, repowering existing plants and upgrading transmission lines, in deciding whether there is any substantial benefit to New York State to leaving the Indian Point option open. We note that New York State, by filing this Petition, has made abundantly clear that it believes there are ample and preferable energy alternatives to Indian Point.

By reliance on its crabbed view of the purpose of the project as articulated in the ER at 8-1 and in its Opposition at page 76, Energy attempts to equate this case with the very different facts involved in the early site approval *Clinton* case. *Envtl. Law & Policy Ctr. v. NRC*, 470 F.3d 676 (7th Cir. 2006) affirming *Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), LBP-05-19, 62 N.R.C. 134 *aff’d* CLI-05-29, 62 N.R.C. 801 (2005)(“*Clinton*”). Entergy focuses only on different ways of generating electricity rather than on the issue identified by the NRC, whether it is advantageous to keep this method of generating electricity open in the face of numerous other options to meet New York State’s energy needs, many of which, as detailed in these Contentions and discussed in the Schlissel Declaration, focus on efficiency and

transmission rather than creating more generating capacity to replace Indian Point.

While acknowledging that the ER must “discuss those alternatives that are reasonable and ‘will bring about the ends’ of the proposed action,” Entergy Answer at 78, Entergy severely and artificially restricts the scope of the “ends” of the proposal and defines it to include only ends that serves its purpose. Entergy Answer at 76. Such a narrow view of the proposal and the ends it will meet has been rejected by the President’s Council on Environmental Quality (“CEQ”). CEQ has addressed the issue of the extent to which an Applicant can restrict alternatives and has made clear that the view urged by Entergy is not permissible:

Q. If an EIS is prepared in connection with an application for a permit or other federal approval, must the EIS rigorously analyze and discuss alternatives that are outside the capability of the applicant or can it be limited to reasonable alternatives that can be carried out by the applicant

A. Section 1502.14 requires the EIS to examine all reasonable alternatives to the proposal. In determining the scope of alternatives to be considered, the emphasis is on what is “reasonable” rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative. *Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant.*

Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulations

46 Fed. Reg. 18026, 18027 (1981) (emphasis added).

This guidance from CEQ has been adopted in case law:

At the outset we note that the evaluation of “alternatives” mandated by NEPA is to be an evaluation of *alternative means to*

accomplish the general goal of an action; it is not an evaluation of the alternative means by which a particular applicant can reach his goals. In the current proposal the general goal is to deliver coal from mine to utility. See AR at 2559-60 (Final EA). In some discussion of alternatives to the proposal, the Corps has suggested that an alternative may not be feasible at least partly because the applicant does not own the necessary land or perhaps cannot gain access to it. See, e.g., AR at 1072, 1073 (Preliminary Case Report). The fact that this applicant does not now own an alternative site is only marginally relevant (if it is relevant at all) to whether feasible alternatives exist to the applicant's proposal.

Van Abbema v. Fornell 807 F.2d 633, 638 -639 (7th Cir. 1986) (emphasis added); *see also Alaska Wilderness Recreation & Tourism v. Morrison*, 67 F.3d 723, 729 (9th Cir.1995)(“The existence of a viable but unexamined alternative renders an environmental impact statement inadequate.” (citation omitted)); *Simmons v. U.S. Army Corps of Engineers*, 120 F.3d 664, 669 (7th Cir. 1997)(“An agency cannot restrict its analysis to those ‘alternative means by which a particular applicant can reach his goals.’ *Van Abbema*, 807 F.2d at 638 (emphasis added); *contra, Busey*, 938 F.2d at 198-99.”). New York State has presented substantial evidence of numerous alternatives to the proposed action that are feasible and not speculative. New York State has shown how it disagrees with Entergy’s cursory rejection of many of these options and its failure to consider others. For example, Entergy asserts that “the potential to displace the entire generation at the site solely with conservation is not realistic.” ER at 8-56. The evidence from the Schlissel Declaration and the numerous studies cited in the supporting evidence for Contention 9 directly contradict that unsupported assertion. Each option proposed by New York State is supported by evidence of its feasibility as demonstrated by government agencies and

others that are taking concrete steps to implement such options. There is nothing speculative about these proposals and, except for the bare contrary assertions in the ER, there is no challenge to these well-supported alternatives.

The failure of the ER to fully consider reasonable alternatives and fully discuss the benefits and costs of such alternatives in the context of considering the implications of the “no action” alternative is particularly troublesome because Staff is authorized to rely on the ER and its evaluation of alternatives:

Agencies are not obliged to create alternatives to a project in an EIS and may instead rely upon the applicant's list of alternatives. An agency "is not a business consulting firm. It is in no position to conduct a feasibility study of alternative sites." *River Road Alliance, Inc. v. Corps of Engineers of U.S. Army*, 764 F.2d 445, 452-53 (7th Cir. 1985). Rather, it "has to depend on the parties for such information." *Id. See also Friends of the Earth v. Hintz*, 800 F.2d 822, 833 (9th Cir. 1986) ("The Corps was not required to conduct a further study of alternatives or to independently find possible sites overlooked by [the applicant].").

In the Matter of Dominion Nuclear North Anna, LLC (Early Site Permit for North Anna ESP Site), 65 N.R.C. 539, 609 (2007). Thus, unless the scope of the reasonable alternatives that can meet the general goal of the proposed action, and that may occur if the “no action” alternative is adopted, are expanded to consider the alternatives identified in Contentions 9-11 and to consider the considerable evidence of the feasibility of such alternatives, the EIS for the proposal is likely to be similarly stunted in its consideration of the “no action” alternative.

Entergy also points to the decision in *Clinton* for the proposition that energy conservation is not an option that needs to be considered. As already noted, the GEIS explicitly requires

consideration of this alternative as part of the “no action” alternative. In addition, *Clinton* does not support the proposition for which Entergy cites it.

Clinton was an early site approval case, not a license renewal case. The general goal of the proposal was to create new base load capacity. The ultimate question, which the Circuit Court concluded was not yet fully ripe for consideration, was whether there was any need for such new generating capacity. The court did not approve doing away with any analysis of energy efficiency, which it equated with a “need for power” analysis, before approving construction of a new plant, but emphasized that because it was an early site review it was acceptable to postpone that analysis until it was closer to the time when the plant would be built and operated³¹:

the agency regulations at issue are not inconsistent with the environmental law, because all relevant issues will eventually be considered. Courts have permitted agencies to defer certain issues in an EIS for a multistage project when detailed useful information on a given topic is not “meaningfully possible” to obtain, and the unavailable information is not essential to determination at the earlier stage . . . In this case, it is especially reasonable to defer the “need for power” analysis to a later stage considering that construction on the nuclear reactor could begin as late as forty years from now.

Clinton, 470 F.3d at 684. The stated goal of the proposal by Exelon was to create a new source of base load capacity and it conducted an extensive analysis of alternative ways to meet that goal which the Court concluded was sufficient without also considering energy conservation which was beyond Exelon’s power to implement. *Id.* at 684.

³¹ Unlike an early site approval, the license renewal decision comes only a few years before the license expires, and there is no further hearing.

Both Entergy and Staff assert that because energy conservation, particularly demand-side management, is beyond the ability of Entergy to implement, the ER and the Commission should not consider them in assessing whether to relicense Indian Point.³² Entergy Answer at 76; Staff Response at 47. But, as already noted in the citations above, NEPA is not about what the applicant wants. NEPA is about what the federal agency should do. NRC is faced with deciding whether to leave the Indian Point option open after 2013 and 2015. It is required to consider the implications of its decision. The ER asserts that denying relicenses would create serious problems because various options would either be environmentally worse than Indian Point (like coal or natural gas) or would be inadequate to fill the gap. New York State has demonstrated that these conclusions in the ER are wrong and that there is much greater potential for conservation, renewables, transmission line upgrades and re-powering than the ER concludes. That is the essence of an issue that warrants a full hearing.

Clinton also rejected the proposition that the goal of the project is to be equated with the

³² Moreover, Entergy and Staff undersell Entergy's ability to deliver conservation efforts, assuming appropriate regulatory direction. *See e.g.*, www.entergy-mississippi.com/content/our_community/advocate/Mobile_Home.pdf (where Entergy provides advice on how to conserve energy to its customers) and ER at ¶ 8.3.11. And Entergy could do much more as does another major nuclear power plant owner. *See Dominion Virginia Power Announces Energy Conservation Efforts* (July 13, 2007) available at <http://www.epa.gov/cleanenergy/documents/pressroom/DominionVirginiaPower.pdf>, where Dominion describes programs it is implementing to help customers purchase more efficient electric powered equipment. Thus, the fact that Entergy may not be currently engaged in an aggressive program to implement energy conservation is no reason that it could not. Whatever limitations on evaluating alternatives may exist, they do not countenance an applicant's refusal to undertake alternative actions that it could implement as an excuse for not exploring those alternatives and determining whether the proposal should be accepted or rejected.

applicant's goals:

We have held that blindly adopting the applicant's goals is "a losing proposition" because it does not allow for the full consideration of alternatives required by NEPA. *Id.* [120 F.3d] at 669. NEPA requires an agency to "exercise a degree of skepticism in dealing with self-serving statements from a prime beneficiary of the project" and to look at the general goal of the project rather than only those alternatives by which a particular applicant can reach its own specific goals.

470 F.3d at 683.

One of Entergy's final general criticisms is the assertion that there is no dispute between New York State and Entergy because New York State does not identify deficiencies in the ER with sufficient particularity. That assertion is flatly wrong. The Contentions clearly identify specific portions of the ER where a full discussion of energy conservation, renewable energy, transmission line upgrades, and re-powering existing plants are missing and should have been included. *See* New York State Petition at 106, 108, 120, 121.

In addition, it is difficult to produce substantial references that identify the conflict when the thrust of Contentions 9-11 is that the ER fails to fully consider energy alternatives and their positive impacts. New York State identifies where, in the ER, the proper analysis should occur.

If any party is guilty of failing to respond specifically, it is Entergy. In dozens of pages and citations to authoritative studies New York State identifies where governmental agencies and experts, including New York State's own experts, establish that energy conservation, renewable energy, transmission line upgrades and re-powering are not only concepts, but viable options, some of which are already being implemented, and all of which are feasible, in the event IP2 and

IP3 are not relicensed. Entergy's stock answer is that there is no showing of the feasibility of any alternatives. However, Entergy totally ignores every cited study and every reasoned conclusion offered by New York State's experts. One glaring example of this failure by Entergy to challenge the actual evidence offered is its assertion that "Petitioner's bare assertion that '[w]hen combined with other energy resources, wind can produce energy in patterns comparable to a base-load generation facility' is simply not enough to carry the day." Entergy Answer at 82. The statement is fully supported by New York State's expert report which provides a full and detailed explanation why that statement is correct and analyzes studies and information specific to Indian Point's service territory to show how wind would be a feasible alternative combined with other energy resources. Schlissel Declaration, Report at 8-10.³³

One final argument offered by Entergy and Staff is specific to Contention 11. Staff argues that even if relicensing Indian Point is a disincentive to develop other energy options, there is no evidence that allowing Indian Point to operate would produce any adverse environmental impact. New York State identifies substantial adverse environmental impacts associated with allowing Indian Point to operate. *See* New York State Petition at Contentions 12-17, 28-32. Even Entergy devotes two chapters and dozens of pages to an analysis of the adverse impacts of allowing Indian Point to operate. *See* ER at Chapters 6 and 8.

³³ Obviously the admissibility stage is not the time to argue over which studies or experts are correct. But if Entergy bases its argument on the lack of supporting evidence, it has the duty to discuss the supporting evidence offered and show why it is insufficient. A "bare assertion . . . is simply not enough to carry the day." Entergy Answer at 82.

Entergy asserts Contention 11 should be rejected because it is “at best, strained, speculative, and without foundation” and moreover Entergy has “no legal or other obligation to shut down IP2 and/or IP3 to help NYS meet its energy conservation goals.” Entergy Answer at 85. This argument misreads the Contention. Contention 11 argues that the ER has overlooked and failed to discuss how the closure of Indian Point might spur on environmentally preferable alternatives. This Contention was based on the Declaration of Peter Bradford, a former Commissioner of the NRC, former Chairman of the New York Public Service Commission, and a former member and Chair of the Maine Public Service Commission. In his Declaration, Mr. Bradford provides several specific examples to support the statement that denying the relicenses of Indian Point will substantially enhance the likelihood that environmentally preferable energy options will be implemented. At a minimum, the ER should have considered this positive impact of rejecting the license renewal.

CONTENTION 12

Contention 12 alleged that Entergy used an inaccurate and outdated analysis to come up with decontamination and cleanup cost figures, which led to an inaccurate Severe Accident Mitigation Alternatives (“SAMA”) analysis. New York State asserted that the MELCOR Accident Consequence Code System (“MACCS/MACCS2”) is inaccurate in this context and is not the appropriate proxy by which to measure decontamination costs because it assumes a larger particle size than that taken into account by MACCS2. In support of this Contention, New York State cited two publicly available reports, Contention 12, ¶ 11, as well as the 1996 Sandia

Laboratories Report on site restoration costs, which contains a more relevant and appropriate framework for determining site restoration costs.³⁴ See New York State Contention 12, ¶ 11, citing D. Chanin and W. Murfin, *Site Restoration: Estimation of Attributable Costs from Plutonium-Dispersal Accidents*, SAND96-0957, Unlimited Release, UC-502, (May 1996)(“*Site Restoration*”).

Entergy and Staff assert lack of basis as a premise for opposing admission of this contention, and Entergy complains more than once that New York State did not provide expert opinion in this contention. Entergy Answer at 87, 90. However, 10 C.F.R. § 2.309(f) does not require expert testimony. See 10 C.F.R. § 2.309(f)(requiring only “a concise statement of the alleged facts *or* expert opinions” at this stage)(emphasis added). Numerous contentions have been admitted in other proceedings without expert testimony, as none is required by the regulations. See, e.g., Order and Memorandum, Entergy Nuclear Generation Company and Entergy Nuclear Operations, Inc. (Pilgrim Nuclear Power Station) (October 16, 2006), ADAMS ML062890259 (admitting petitioner-intervenor’s contention involving buried piping without expert affidavits).

The Board should reject Entergy and Staff’s attempt to distinguish the relevance of the *Site Restoration* report on grounds that the report deals with plutonium accidents and not reactor severe accidents. See Entergy Answer at 89, Staff Response at 51. As New York State made

³⁴ Incidentally, the same individual, David Chanin, who developed the MACCS2 code co-authored the *Site Restoration* report.

clear in Contention 12, the *Site Restoration* report also discusses nuclear reactor accidents. See New York State Petition at 143-44 (“*Site Restoration* recognized that earlier estimates (such as those incorporated within the MACCS codes) of decontamination costs are incorrect because they examined fallout from the nuclear explosion of nuclear weapons that produce large particles and high mass loadings (*i.e.*, particles ranging in size from tens to hundreds of microns). [*Site Restoration*] at 2-9 to 2-10, 5-7. In the words of SAND96-0957, ‘[d]ata on recovery from nuclear explosions that have been publicly available since the 1960’s appear to have been misinterpreted, *which has led to long-standing underestimates of the potential economic costs of severe reactor accidents.*’ [*Site Restoration*] at 2-10.” (emphasis added)).³⁵

Entergy offers LR-ISG-2006-03 as support for its opposition; however, as Entergy notes, LR-ISG-2006-03 is nothing more than guidance, Entergy Answer at 106, which can and should be disregarded when it is established, as it has been here in New York State’s contention, that a SAMA analysis tool which might be appropriate elsewhere would not be appropriate here for site- and facility-specific reasons, such as the suburban/urban nature of the 50-mile radius surrounding Indian Point; the unusually high population density around this facility; and the increased cleanup costs associated with factors unique to the New York metropolitan area such as tourism, educational, transportation, and financial factors. An analysis tool should not be universally applied in every instance, even when it would result in inaccurate results, simply

³⁵ Moreover, Entergy’s attempt to fault New York State for not including document citations for Bases 2-10, Entergy Answer at 87, is a red-herring; the document citations for these statements are found in the Supporting Evidence section of New York State’s Contention 12.

because Staff has approved of its use elsewhere.

It is well established that particle size affects removal (*i.e.*, cleanup) rates. *See* New York State's Contention 12, ¶ 14, discussing the *Site Restoration* report at 5-7; *see also* NUREG 75-014, *Reactor Safety Study: An Assessment of Accident Risks in U.S. Commercial Power Plants* (October 1975), section 6.3, at 6-1 ("there are significant dependencies of removal rates on precipitation type, rate, and hydrometeor size distributions; on particle density, wettability, and size distributions; on gaseous chemical composition, water solubility, and reaction rates; on vegetative type, biomass, and physiological state; and on atmospheric stability, wind field, and humidity.").

There is, fortunately, a dearth of practical experience with widespread radioactive contamination from a reactor severe accident with which to examine radioactive dispersion; however, as the *Site Restoration* report relates, accidents involving weapons-grade nuclear material occur not infrequently. *See Site Restoration*, Appendix A. While it is true that the *Site Restoration* report focuses on plutonium dispersal, the report addresses broadly the dispersion of radioactive particles, the specific atomic species of which is irrelevant as to many of the factors discussed in the report including decontamination methods and costs, and it stands as one of the most, if not the most, comprehensive existing practical guides to radioactivity dispersion and decontamination costs.

Entergy mischaracterizes the nature of New York State's challenge when it claims Contention 12 has "mounted generalized attacks on the MACCS2 code." Entergy Answer at 87.

The “attack” is not at all generalized but focuses on particular aspects of the MACCS2 code that mis-represent the post-accident consequences of a severe accident, thus distorting the SAMA analysis of the damages such an accident would cause. Entergy’s citation to the decision in *Pilgrim*, Entergy Answer at 87, is also inapposite. In that case the Board *accepted* a contention on inadequacies of SAMA input data and was presented with a generalized critique of the dispersion modeling characteristics of MACCS2 and Entergy responded - - at the summary disposition stage - - with its analysis purporting to use the alternative dispersion model to demonstrate that the impact differences were trivial. *Entergy Nuclear Generation Co. & Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), LBP-07-13, slip op. (Oct. 30, 2007), ADAMS ML073030322. In its opposition to Contention 12, Entergy cites a passage from *Pilgrim* which offers no support for its position:

[W]here this code has been widely used and accepted as an appropriate tool in a large number of *similar instances*, the Staff is fully justified in finding, after due consideration of the manner in which the code has been used, that analysis using this code is an acceptable method for performance of SAMA analysis.

Entergy Answer at 88 (citing *Entergy Nuclear Generation Co. & Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), LBP-07-13, *slip op.* at 9 (Oct. 30, 2007), ADAMS ML073030322 (emphasis added). Clearly, this quote has to be read in the context of the Pilgrim procedural posture, which differs significantly from that of the matter at hand. In *Pilgrim*, following admission of the SAMA contention challenging Entergy’s cost-benefit analysis, Entergy offered (and the intervenor did not dispute) “a series of bounding analyses” which

indicated that the flaws in the SAMA analysis were not large enough to be material. *Id.* at 15.

The Pilgrim Board found that Entergy had “cured” any omissions in the SAMA analysis through its subsequent analysis. *Id.* at 24. Whether or not Entergy can do the same here is irrelevant at this stage of the license renewal proceeding; it matters now only that New York State has stated an admissible contention.

Moreover, it is precisely the point Entergy cites - - that there is no “similar instance” to the relicensing of a two-unit nuclear power plant twenty miles from one of the nation’s most densely populated urban and financial centers - - that calls for the application of appropriate and accurate SAMA analysis tools, even if that may mean straying from Entergy’s typical use of MACCS2. It is New York State’s position that Indian Point’s specific characteristics call for a break from the usual application of the MACCS2 code in SAMA analyses, even if it is “a well-established industry and regulatory practice,” Entergy Answer at 88, in this instance. An error, even if long-standing, is no less an error, particularly since the challenge presented here has not been addressed in previous cases. Staff’s reliance, over time, on a given methodology does not render that methodology a regulatory requirement.

Finally, Entergy makes a false argument when stating that New York State fails to challenge specific inputs or assumptions used by Entergy in its SAMA analysis. Entergy Answer at 88. New York State has explicitly challenged Entergy’s reliance on inaccurate particle size and decontamination cost figures in its SAMA analysis, has referenced three separate reports on this point including Sandia Laboratories’ *Site Restoration* report on cleanup costs, and has

offered far more here than the much cited and never justified allegation that the Contentions are based on “bare assertions.”

CONTENTION 13

Contention 13 is a challenge to the SAMA analysis for its failure to consider the adverse impact of a severe accident involving the loss of redundant safe shutdown electrical trains due to fire at IP3 and the failure to consider measures to mitigate those impacts. The risk of this severe accident is created by the fact that the redundant safe shutdown trains are vulnerable to damage because they only have 24 or 30 minutes fire protection, substantially less than the minimum required by Appendix R. Because there is no analysis of this severe accident the SAMA also does not include an analysis of the cost of eliminating this risk compared to the cost of the risk.

Entergy and Staff oppose admissibility of the Contention for two reasons. First, they assert it is an impermissible attack on the CLB. Second, they assert New York State has not conducted a SAMA analysis of its own to demonstrate that the results of this accident will be more severe than other SAMA events already analyzed in the ER. Both criticisms are without merit.

First, Contention 13 does not challenge the CLB. As already noted, no one knows what is the IP3 CLB. In addition, the Contention is based on acceptance of the plant configuration as it exists and the residual risk that remains for IP3 leaves these critical redundant safe shutdown trains vulnerable to destruction by fire with potentially catastrophic consequences. Mitigation

measures can be taken to eliminate this vulnerability.³⁶ The purpose of the SAMA analysis is to assess the impact of severe accidents that may occur even if the plant were in compliance with its CLB and to weigh those impacts against the costs and benefits of mitigation measures to determine whether mitigation is warranted. Any mitigation measure is likely to change the CLB if it is deemed more cost effective than the current situation but that does not make the SAMA analysis a challenge to the CLB nor does it make a challenge to the SAMA analysis a challenge to the CLB. The criticism by Entergy and Staff that this Contention challenges the CLB is just wrong. The Contention that challenges the IP3 safety systems with regard to inadequate fire protection for redundant safe shutdown trains is Contention 20. The viability of Contention 20 is discussed *infra*.

Second, New York State has provided substantial bases and evidence to demonstrate that at IP3 a severe accident involving loss of redundant safe shutdown trains is plausible and will produce substantial consequences, none of which bases or evidence are substantively challenged by Entergy or Staff. In approving the reduced fire protection at IP3 the Staff identified the

³⁶ Contention 13 cites the Staff's Federal Register Notice approving the reduced fire protection for IP3. New York State Petition at 146-7; 72 Fed. Reg. 56798-799. That notice identifies NRC Generic Letter 2006-03 which identified the problem and stated that "NRC staff requests licensees to review their fire protection programs in light of information in IN 05-07 and this GL and implement appropriate compensatory measures and *develop plans to resolve any nonconformances*." *Id.* at 6 (emphasis added). See also OIG Special Inquiry, "NRC's Oversight of Hemyc Fire Barriers," Case No. 05-46 dated January 18, 2008 at 13 ("The NRC accepted responses to the generic letter which discussed licensee plans to resolve problems with the Hemyc fire barriers which ranged from *replacing Hemyc with other fire barriers* to requesting exemptions from NRC fire protection regulations." (emphasis added)).

critical role played by the redundant safe shutdown trains that are vulnerable to fire damage. New York State Petition at 146-7. New York State's Petition specifically identifies the deficiency in the SAMA analysis of a fire based event both in the ER and in the underlying documentation for the ER noting the disagreement with the assertion in the ER that the fire analysis is conservative. *Id.* at 147. Contention 13 also identifies at least two plausible mechanisms by which a fire in these critical areas of IP3 could burn for more than 24 or 30 minutes due either to the inadvertent leaving of combustible material in the area or terrorist acts, noting in particular that the plausibility of terrorist acts seeking to cause a fire at the plant is sufficiently plausible that the Staff has directed IP3 to take steps to defend against such acts. *Id.* at 147-8.

Rather than join issue with these specific bases and evidence, Entergy and Staff make the preposterous suggestion that any SAMA challenge can only be viable if New York State actually conducts an alternative SAMA analysis to demonstrate that if the severe accident posited were to occur the consequences would be worse than any SAMA analysis already conducted. Since the purpose of SAMA is to weigh the costs of mitigation of any particular accident against the consequences of that accident, it is meaningless to demand that any SAMA challenge demonstrate that its consequences are worse than any other analysis. Each SAMA analysis is separate and includes an accident-specific calculation of costs and benefits of the accident and mitigation measures. The questions are, and should be, whether the proposed accident scenario is plausible (New York State has shown that it is) and whether there is a potential mitigation

measure to address the consequences (New York State has shown that upgrading the fire protection to 1 hour, as required by Appendix R, is an available mitigation measure).

Moreover, the argument advanced by Entergy and Staff seeks to shift the burden of proof from Entergy to New York State. New York State is not the party that must prove whether a particular severe accident and its consequences can be feasibly and economically mitigated. That burden is on Entergy. *See In the Matter of Entergy Nuclear Generation Company and Entergy Nuclear Operations, Inc. (Pilgrim Nuclear Power Station)* 64 N.R.C. 257, 359 (ASLB 2006) (“the strict contention admissibility requirements for a sufficient factual basis ‘do[] not shift the ultimate burden of proof from the applicant to the petitioner’” (footnote omitted)); Statement of Consideration 1989 Hearing Procedures, 54 Fed. Reg. 33168, 33171 (“The revised rule does not shift the ultimate burden of persuasion on the question of whether the permit or license should be issued; it rests with the applicant.”); 10 C.F.R. § 51.53(c)(3)(ii)(L) (“a consideration of alternatives to mitigate severe accidents must be provided”). New York State’s duty, where the claim is that the LRA fails to consider relevant information is “the identification of each failure and supporting reasons for the petitioner’s belief.” 10 C.F.R. § 2.309(f)(1)(vi). “Where the intervenor believes the application and supporting material do not address a relevant matter, it will be sufficient for the intervenor to explain why the application is deficient.” Statement of Consideration 1989 Hearing Procedures Amendments, 54 Fed. Reg. 33168, 33170. In addition, conducting a full SAMA analysis would require access to information and computer codes not readily available to an intervenor and at a cost that would be prohibitive, even for a governmental

entity like New York State.

CONTENTIONS 14 AND 15

New York State's Fourteenth and Fifteenth Contentions allege that the most recent seismic data reported in the so-called "updated" FSARs for IP2 and IP3 are over 25 years old and thus do not include a substantial body of new data developed in the last 25 years by seismologists, the USGS, and an extensive network of earthquake detection systems. Similarly, New York State pointed out that the seismic information included in ConEd's 1988 *Supplemental Environmental Information in Support of Indian Point Unit No. 1* is at least 20 years old. As a result of these deficiencies, New York State alleged that the SAMA analysis fails to include more recent information regarding the type, frequency and severity of potential earthquakes and fails to include an analysis of severe accident mitigation alternatives that could reduce the effect of such earthquakes. New York State's contentions were supported by declarations from Dr. Lynn Sykes and Leonardo Seeber, both from Columbia University's Lamont Doherty Earth Observatory.

The new engineering seismological findings, accumulating since the IP2 and IP3 licenses that were granted include - but are not limited to - the following:

1. Higher peak ground acceleration ("PGA") for the Indian Point site (given by the USGS as 0.19g at a probability level commonly used for seismic building codes), compared to 0.1g used for the old OBE design, and 0.15g for the NRC's earlier SSE safety analyses of IP2/IP3 in the 1970s.
2. A peak of 1.5 to 4 times higher response spectral amplitudes for seismic ground motions for the range of high frequencies ("HF") between 10 and 100 Hz compared to spectra used by the original OBE and SSE design. Despite assertions

by Entergy that IP1/IP2/IP3 structures and components are not sensitive to such HF motions, its submitted UFSARs and other documents themselves clearly indicate that many Seismic Category 1 Structures at IP2/IP3 have their basic (and some higher-) mode responses in this high frequency range, and thus cannot be treated as if behaving rigidly. They are oscillating, subject to response amplifications at these high frequencies.

3. Many modern seismic design aspects of ground motions were not considered in the old OBE and SSE designs for IP2/IP3. They include - but are not limited to: different ratios of Horizontal to Vertical (“H/V”) ground motions as a function of frequency; incoherency of ground motions leading to torsional seismic loads not previously considered; and, to a lesser degree, actual geological bedrock conditions and how structures interact with these site conditions, essentially having been assumed behaving seismically quasi-rigidly.

A. Contention 14: The Seismic Fragility of the 1950's-Era IP1

Regarding IP1's systems, structures, and components, New York State set forth the following factual allegations none of which are disputed by the Staff or Entergy. On March 22, 1955, ConEd applied to the newly-created Atomic Energy Commission for permission to construct IP1. In May 1956, the AEC issued a construction license to ConEd to build IP1. At that time, the AEC had not developed detailed siting regulations to address seismic or population issues. According to the 1980 decommissioning plan for the IP1 reactor, “Unit 1 contains *extensive common facilities* that are required for the continued operation of Units 2 and 3.” See *Decommissioning Plan for Indian Point Unit 1*, § 2.1 (October 1980). In 1988, ConEd told the NRC that Unit 1 “constitutes an *integral part* of power generating operations at the Indian Point site.” See *Supplemental Environmental Information in Support of Indian Point Unit No. 1*, p. 2 (March 1988). See also Appendix B which identifies IP1 systems and components which are identified in the LRA and UFSAR as in current shared use with IP2 and IP3. For example,

ConEd represented to the NRC that the Indian Point Nuclear Power Station uses several IP1 systems, including without limitation: water supply, service boilers, electrical systems, integrated radwaste system, and nuclear steam generator blowdown purification system. *See Decommissioning Plan for Indian Point Unit 1*, § 2.1. ConEd's 1988 report contained a limited discussion of seismic considerations that were limited to whether or not Unit 1's spent fuel itself would be damaged. *See Supplemental Environmental Information in Support of Indian Point Unit No. 1*, p. 17. Notably, that report did not examine whether that aging unit's systems, structures, and components, which constituted "an integral part of power generating operations" of IP2 and IP3, would be affected by a SSE earthquake.³⁷ New data developed in the last 20 years disclose a substantially higher likelihood of significant earthquake activity in the vicinity of IP1 that could exceed the 1950s earthquake design for the facility. In addition, new data disclose that there is likely to be higher peak ground acceleration and higher response spectral amplitudes for seismic ground motions for the range of HF between 10 and 100 Hz. New York State Petition at 150.

Staff and Entergy oppose the admission of any contention focused on the seismic weaknesses of IP1's 50-year-old systems, structures, and components that continue to perform "an integral part" of IP2 and IP3's operations. *See Staff Response at 54-55; Entergy Answer at 96-103.* Both apparently would prefer to continue to use those "extensive" vestigial systems and

³⁷ Curiously, although both the 1980 and 1988 IP1 reports were included in Entergy's April 30, 2007 License Renewal Application under the file entitled "unit-1-uhsar.pdf," the LRA does not contain a UFSAR for IP1, and apparently one does not exist.

components, which were fabricated and installed during a different era of seismic understanding, without updating important facility documentation to reflecting their aged and seismically-fragile condition.

Staff's opposition centers on its claim that New York State failed to raise a material issue of law or fact because it failed to specifically allege that the new seismic information would change the results of the SAMA analysis. Staff Response at 54. Like several New York State Contentions, these Contentions are based on 10 C.F.R. § 2.309(f)(1)(vi) which recognizes the validity of a contention based on the failure of the LRA to include necessary information.

"Where the intervenor believes the application and supporting material do not address a relevant matter, it will be sufficient for the intervenor to explain why the application is deficient."

Statement of Consideration 1989 Hearing Procedures Amendments, 54 Fed. Reg. 33168, 33170.

New York State has fully explained "why the application is deficient." Staff's demand improperly seeks to shift the burden of proof, from Entergy to establish that its SAMA analyses are accurate, to New York State to establish that they are not. *See In the Matter of Energy Nuclear Generation Company and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station) 64 N.R.C. 257, 359 (ASLB 2006). Moreover, New York State is not in a position to conduct its own SAMA analysis, which would require access to information and computer codes not available to a proposed intervenor at this juncture. Contrary to Staff's argument, New York State's present contention is predicated on the allegation that the UFSARs, ER, and SAMA analysis did not specifically account for the continued reliance on the "extensive" and "integral"

IP1 systems, structures, and components, their aged condition, their different seismic standards, in conjunction with current seismic information and current understanding of the area's seismic hazards as reflected by the USGS seismic hazard map and the statements submitted by New York State's experts. The core of these Contentions, described with great specificity in the bases, supporting evidence, and Declarations of Dr. Sykes and Mr. Seeber, is the failure of the SAMA analysis of earthquake hazards for IP1, IP2, and IP3 to consider newer information that demonstrates the both the likelihood and consequences of an earthquake in this area substantially greater than considered in the SAMA analysis.

Perhaps realizing the problem posed by Contention 14, Entergy devotes seven pages attempting to refute it. Entergy first argues that the State seeks to challenge the CLB, Entergy Answer at 98, but Contention 14 makes no mention of whether there is any licensing basis, let alone a *current* one, for IP1 nor does it challenge any CLB. The Contention takes the plant and its seismic analyses as they are found in the LRA and focuses on deficiencies in the SAMA analysis that relies on the outdated seismic data. Entergy tries to minimize the extent to which IP2 and IP3 rely on IP1 systems, structures, and components, Entergy Answer at 97-8, but it cannot contest the accuracy of ConEd's representations to the NRC in the documents cited by the State. Next, Entergy argues that collateral estoppel bars any consideration of the issue of IP1's seismic integrity citing to the NRC's 1978 decision regarding the IP3 operating license. *Consolidated Edison Co.*, 6 N.R.C. 547 (1977). Entergy, however, overreaches and appears to mischaracterize, Entergy Answer at 99-100, the 1977 ALAB decision with respect to IP1 where

the two judge majority held:

The ground acceleration value used for the design of Indian Point, Units 2 and 3, should remain at 0.15g. *Indian Point, Unit 1, was designed for a lesser value, but the reactor is currently shut down and the fuel removed. If it should be reactivated it must be back-fitted to sustain an acceleration of 0.15g.*

6 N.R.C. at 550. Thus, far from helping Entergy, *Consolidated Edison* confirms that IP1's seismic construction was built to "a lesser value" and that, as constructed, it could not sustain an acceleration of even 0.15g. Indeed, it is Entergy (as the successor in interest to ConEd) and the Staff who must be bound by the 1977 ASAB decision concerning the seismic-fragility of IP1. Entergy also seeks to avoid the fact that IP1 is seismically vulnerable by belittling the statement and Declaration of Dr. Sykes, noting his prominent role in the 1977 hearing. As the supporting evidence and Declarations of Dr. Sykes and Mr. Seeber made clear, the evidence today is far more compelling, more extensive, and confirms Dr. Sykes' earlier concerns.³⁸ Entergy also loses sight of the fact that the issue in this Contention is not whether IP1 meets current safety standards, but rather, given its seismic vulnerability, should the SAMA analysis in the ER be modified to reflect the higher risk of severe consequences and the higher severe consequences in the event of an earthquake and IP2 and IP3's reliance on IP1's "integral" systems, structures, and components.

³⁸ Entergy's collateral estoppel argument also rings hollow given Staff's 2005 determination to open a generic safety issue inquiry into the seismic hazards for nuclear reactors located in the central and eastern United States. *See* Lynn Sykes Statement at 1 (referencing NRC generic issue GI-199).

Entergy finishes by quibbling about whether New York State has demonstrated a material issue with sufficient specificity. Entergy Answer at 101-03. Entergy misapprehends New York State's present contention. As noted above with respect to Staff's argument, New York State's fourteenth contention is predicated on the allegation that the UFSARs, ER, and SAMA analysis did not specifically account for the continued reliance on the "extensive" and "integral" IP1 systems, structures, and components, their aged condition, their different seismic standards, in conjunction with current seismic information. New York State Petition at 154. *See also* Appendix B for a list of those IP1 systems and components which are shared with and support the operations of IP2 and IP3, as identified in Entergy's LRA and UFSAR.

B. Contention 15: The Significant Accident Mitigation Alternatives Analysis for Seismic Events at IP2 and IP3 is Incomplete

Contention 15 alleged that IP2 and IP3's UFSARs and thus its SAMA analyses were never "updated" to reflect the last 30 years of seismic experience in eastern North America as well as new seismic analyses developed by the United States Geological Service and other seismologists specific to this site. Entergy opposes the contention as beyond the scope of license renewal proceedings and for failing to demonstrate a genuine dispute of a material fact with sufficient specificity. Entergy Answer at 104-08.

Neither objection has merit. Entergy cannot contest that it incorporated a seismic hazard analysis as part of its proffered SAMA analysis. Entergy Answer at 106-07. Thus, Entergy necessarily concedes that seismic hazard analysis can fall within the scope of Part 51 review of license renewal applications.

Moreover, New York State provided specific allegations detailing inadequacies in Entergy's LRA and deficiencies in Entergy's SAMA analysis. Although Staff had worked on a program named Individual Plant Examination of External Events ("IPEEE") for IP2 and IP3, there is no indication that those analyses included the additional seismic data upon which Contention 15 is based and, significantly, neither Staff nor Entergy point to any evidence to the contrary. In fact the ER did not discuss or disclose the actual assumptions or inputs regarding seismic events that went into calculating the Core Damage Factor ("CDF") numbers. The new data suggest higher peak ground accelerations, and higher response spectral amplitudes for seismic ground motions in the HF range between 10 and 100 Hz, and new techniques and many modern seismic design aspects of ground motions none of which are recognized in the LRA, ER or IPEEE and none of which have been considered in the SAMA analysis for IP2 and IP3 (*e.g.*, torsional effects from, and incoherency of, ground motions; and ratios of vertical to horizontal ground motions as a function of frequency). New York State Petition at 157. Because the LRA, IPEEE, and SAMA analyses do not sufficiently document that they have taken into account the greater knowledge regarding the earthquake likelihood and its consequences, the LRA, IPEEE, and SAMA fail to demonstrate that the seismic analyses done for the SAMA adequately evaluate either the likelihood or the consequences of a severe seismic accident at IP2 or IP3. Thus, the assertions in the ER that "[a] seismic PSA analysis was performed for the seismic portion of the IP2 IPEEE. The seismic PSA analysis was a conservative analysis" (ER at p. 4-65) and that "[a] seismic PSA analysis was performed for the seismic portion of the IP3 IPEEE. The seismic PSA

analysis was a conservative analysis," ER at p. 4-68, are not supported by the ER, LRA, or IPEEE. None of those documents reflect a full analysis of the potential impact of an earthquake on the plant structures and components taking into account all of the new information available regarding earthquakes in the area of Indian Point. New York State Petition at 155-58.

In addition, New York State further specifically alleged that the IPEEE for IP3 identified a mean seismic CDF as $5.90E-05$ as calculated by EPRI, but Entergy's ER starts at the much lower LLNL value of $4.40E-05$ without any explanation of why the EPRI value was inapplicable or inappropriate, particularly since Entergy claims the calculation it made was "conservative." New York State Petition at 161-62 (referencing NUREG-1742, IPEEE Vol. 2 at 2-5 and Entergy ER at 4-68).³⁹ In its response, Entergy does not attempt to explain this difference. Thus, these specific allegations presented by New York State are more than sufficient to sustain the contention.

CONTENTION 16

In its SAMA analysis, Entergy asserted that it conservatively estimated the population dose of radiation in a severe accident at Indian Point because it assumed that no one would evacuate from the 10 mile emergency evacuation radius around the plant. ER, Appendix E, Attachment E, § 1.5.1 at page E.1-1. Contention 16 challenges this assertion as unsupported because Entergy's air dispersion model will not accurately predict the geographic dispersion of

³⁹ IP3 has the highest CDF of all the operating reactors listed. NUREG-1742, Vol. 2, Table 2.2.

the released radionuclides in an area with huge population concentrations in New York City, only 24 miles away from the plant, and its nearby suburbs. An accurate estimate of the radionuclides' dispersion is essential to an accurate SAMA analysis, because the geographic distribution of the radioactive contaminants affects the number of people exposed and therefore affects the health cost of the accident to which the cost of a mitigation alternative is compared.

The Staff does not dispute that this contention is clearly within the scope of the proceeding because the License Renewal Rule requires an applicant for a renewed license to conduct a site specific SAMA analysis in its ER. 10 C.F.R. § 51.53(c)(3)(L).

Entergy, however, claims that Contention 16 “improperly challenges the NRC regulatory process” and “thus falls outside the scope of this proceeding.” Entergy’s Answer at 110. According to Entergy, New York State’s challenge to the adequacy of the ATMOS atmospheric dispersion model, which is a module within the MACCS2 Code, is an impermissible “collateral attack on the regulatory process” because the use of the MACCS2 code “is consistent” with NEI 05-01, as endorsed by LR-ISG-2006-03. *Id.* This claim is without any legal basis because it conflates NRC regulations, which cannot be challenged in this proceeding, with NRC guidance documents, such as NEI 05-01, which can.

10 C.F.R. § 2.335(a) prohibits only a challenge to any “*rule or regulation*” of the Commission in an adjudicatory hearing (emphasis added). The NRC has no rule or regulation requiring the use of the MACCS2 code for SAMA analyses, much less requiring the use of the ATMOS air dispersion model as a module within MACCS2. To the contrary, NEI 05-01 is a

regulatory guidance; it simply notes that the MACCS2 code is used in many SAMA analyses to calculate the off-site consequences of a severe accident but that some SAMA analyses have used other analytic methods. *See Severe Accident Mitigation Alternative (SAMA) Analysis, Guidance Document*, NEI 05-01 (Rev. A) (November 2005). As the NRC has held, challenges to “standards set forth in regulatory guides,” such as NEI 05-01, are permissible, because these standards are not rules or regulations of the Commission subject to the prohibition of 10 C.F.R. § 2.335(a) but “are regarded as the views of only one party – the Staff, which although entitled to ‘considerable weight,’ are not dispositive.” *See In the Matter of Duke Energy Corporation, (McGuire Nuclear Station, Units 1 and 2, Catawba Nuclear Station, Units 1 and 2)*, 58 N.R.C. 221 (Oct. 2, 2003), (“*McGuire and Catawba*”). Accordingly, Entergy’s attempt to prohibit New York State’s challenge to the NRC’s regulatory guidance document for SAMA analyses must be rejected, just as Duke Energy’s similar attempt was rejected in *McGuire & Catawba*.

The Staff’s and Entergy’s challenge to the contention is based on a mischaracterization of its scope. Contention 16 does not, as Staff and Entergy allege, challenge the basic principle of the MACCS2 Code that estimating the cost of the off-site consequences of a severe nuclear power plant accident should be based on “probabilistic health and economic consequence assessments of hypothetical accidental releases.” *See A Review of the Melcor Accident Consequence System (MACCS): Capabilities and Applications*, Sandia National Laboratories, SAND 95-0148C at page 1. Nor does Contention 16 challenge the MACCS2 Code’s “probabilistic treatment of meteorology” in predicting the dispersion of radionuclides in a severe

nuclear plant accident. *Id.* Contention 16 challenges only the ability of the ATMOS air dispersion model, one of the modules within the MACCS2 Code, to accurately predict the geographic distribution of a radioactive release.

In other words, New York State does not object to the MACCS2 Code's "probabilistic treatment of meteorology," but only to its incorporation of an outdated model to compute those meteorological probabilities. If Entergy had used a more accurate air dispersion model in its SAMA analysis, such as AERMOD or CALPUFF, New York State would have no objection to its use of the MACCS2 Code probabilistic estimates of population dose.

The Staff also opposes Contention 16 on the ground that it fails to raise a genuine material issue. The Staff asserts that no material issue has been raised because New York State fails to show that the MACCS2 Code used by Entergy is deficient. Although the Staff now claims ignorance about the deficiencies of the ATMOS model (Staff Response at 56), there is direct evidence that the Staff has been aware of the problems identified in, and forming the basis for, Contention 16 for some time. In 1999, the NRC chaired a Joint Action Group for Atmospheric Transport and Diffusion which created a directory of atmospheric transport and diffusion consequence assessment models which expressed the same criticism of the ATMOS model as New York State's expert witness, Dr. Bruce A. Egan. The directory was produced for the Office of the Federal Coordinator for Meteorology (OFCM), and stated in a section entitled "strengths/limitations" of the MACCS2 Code that "the weakest model in MACCS may be the straight-line Gaussian plume model of atmospheric transport and diffusion." *See Directory of*

Atmospheric Transport and Diffusion Consequence Assessment Models, Appendix A, Office of the Federal Coordinator for Meteorology, FCM-13-1999(March 1999), available at www.ofcm.gov/atd_dir/pdf/maccs2.pdf.⁴⁰

In any event, Contention 16 clearly explains the deficiencies of the ATMOS air dispersion model for the purpose of determining the population dose caused by a serious nuclear accident specifically at Indian Point -- a plant only 24 miles from the New York City line with 19,000,000 million people living within a 50 mile radius. ER, Appendix E, Attachment E at E.1-87. First, the number of people that may be affected by a radioactive release increases substantially with the radial distance from the plant. Therefore, in order to accurately estimate the total population radiation dose, which is an essential element of a SAMA analysis, it is critical that the air dispersion model in the MACCS2 Code be capable of accurately estimating the geographic distribution of radionuclides within a 50 mile radius. As Dr. Bruce Egan stated in ¶ 31 of his declaration, steady state Gaussian plume models such as ATMOS are not considered accurate for distances beyond 50 km or 32 miles, and the United States Environmental Protection Agency ("US EPA") does not endorse their use for such distances. *See Declaration of Dr. Bruce Egan, ¶ 31.* In sum, because the cost-effectiveness of any particular SAMA is disproportionately influenced by population exposures at large distances from Indian Point, an air dispersion model

⁴⁰ The directory's descriptions of the strengths and weaknesses of various atmospheric diffusion models, including the ATMOS model in the MACCS2 Code, was based on questionnaires to model custodians and project managers and on the results of a U.S. Department of Energy evaluation of consequence assessment methodologies.

such as ATMOS that does not accurately estimate those impacts may understate the health cost of a severe accident.

Second, Dr. Egan described the complex terrain in which Indian Point is located and the way in which the features of that terrain can affect the overall air flow patterns that carry the released radionuclides to the surrounding areas. *See* Egan Declaration at ¶¶ 11-13. As Dr. Egan explained in detail, the ATMOS steady state Gaussian plume model is not appropriate for determining radionuclides concentrations in areas where complex terrain results in local flow regimes that can greatly alter the trajectories and ultimate fate of contaminants. Egan Declaration at ¶¶ 22-29.

These identified deficiencies in the ATMOS model relate directly to the specific geography and population concentrations around Indian Point. It is material to this proceeding whether Entergy's SAMA analysis is accurate and the existence of deficiencies in the air model that can have an impact on the cost side of the SAMA equation is clearly material as well.

Finally, the Staff argues that the Licensing Board in *Pilgrim* has already rejected a similar challenge to the use of the MACCS2 Code at the initial pleading stage of the *Pilgrim* proceeding. Staff Response at 58. However, the proposed intervenor's contention in *Pilgrim* was substantially broader than Contention 16 , and challenged what it characterized as:

the overarching defect in the Applicant's SAMA analysis [which] it looked at severe accident *risks*, rather than severe accident *mitigation alternatives*, as required by the regulation. . . Any time an Applicant multiplies an accident consequence by an extremely low probability number, the consequences will appear minute.

See Request for Hearing and Petition to Intervene by Pilgrim Watch, Docket No. 50-293 (May 25, 2006) at 29 (emphasis in original), ADAMS ML061630125. The Pilgrim intervenor thus objected to any use of the MACCS2 Code for SAMA analyses because of its probabilistic method of assessing accident consequences. And, the Licensing Board in *Pilgrim* only found inadmissible those parts of the challenged air dispersion contention that might “be construed as challenging on a *generic* basis, the use of probabilistic techniques that evaluate risk . . . ” because “the use of probabilistic risk assessment and modeling is obviously accepted and standard practice in SAMA.” *Entergy Nuclear Generation Company and Entergy Nuclear Operations Inc.* (Pilgrim Nuclear Power Station), LPB-06-23, 64 N.R.C. 257, 340 (2006) (“*Pilgrim I*”) (emphasis added). In this case, New York State is *not* challenging the use of probabilistic risk assessment techniques in the MACCS2 Code but only the adequacy of a particular air dispersion model within that code to provide accurate information from which the probabilities can be computed. *See* pages 90-91 above. Therefore, the Pilgrim Board’s rejection of a different and broader contention about the MACCS2 Code is not relevant or controlling here.

In fact, the Pilgrim Licensing Board admitted the intervenor’s meteorological contention insofar as it challenged certain meteorological inputs into the ATMOS model in the MACCS2 Code. As Judge Ann Marshall Young correctly characterized the Board’s action in *Pilgrim*:

. . . in admitting Contention 3 as to input data regarding meteorological patterns we were clearly aware that the Intervenor’s Contention, insofar as it concerned meteorological issues, centrally involved challenges to the straight-line Gaussian plume model and *we did not exclude this*. The plume model, while not input *per se*, in the technical sense is implicitly part of what is “put in” to the

MAACS code to produce results about meteorological patterns.

Entergy Nuclear Generation Company and Entergy Nuclear Operations Inc. (Pilgrim Nuclear Power Station), LPB 07-13, Docket No. 50-293 LR, at 27 (Oct. 30, 2007) (“Pilgrim 2”), ADAMS ML073030322 (Young J., dissenting from grant of summary disposition on Contention 3) (emphasis supplied).

Entergy also opposes the admission of Contention 16 because New York State has not demonstrated that running the MACCS2 Code with an adequate air dispersion model would result in a higher population dose of radiation than the SAMA analysis Entergy conducted using an out-dated air dispersion model. Entergy Answer at 112. However, New York State need not prove that a SAMA analysis using an adequate air dispersion model would result in an increase in the population dose of radiation large enough to render cost-effective some mitigation alternative that Entergy rejected. This argument improperly seeks to shift the burden of proof on Entergy to establish that its SAMA analyses are accurate to New York State to establish that they are not. *See In the Matter of Entergy Nuclear Generation Company and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station) 64 N.R.C. 257, 359 (Oct. 16, 2006).

Moreover, New York State is not in a position to conduct its own SAMA analysis, which would require access to information and computer codes not available to a proposed intervenor.

Entergy also asserts that the Licensing Board’s decision in *Pilgrim 2* has already rejected all of Dr. Egan’s criticisms of the ATMOS air dispersion model contained in Contention 16. Entergy Answer at 111). That is not true. In this case, as Dr. Egan explains in his declaration, a

critical deficiency in the ATMOS model related specifically to Indian Point is its inability to accurately predict the dispersion of radionuclides beyond a radius of 50 km or 32 miles, an area which contains millions of possibly exposed people. See Egan Declaration ¶ 31. The inability of the ATMOS model to accurately estimate the long range transport of radionuclides was not addressed by the *Pilgrim 2* Board, and it therefore did not reject a challenge identical to Contention 16. Moreover, the *Pilgrim 2* Board's rejection of the intervenor's other critiques of the ATMOS air dispersion model was based on additional evidence and analysis presented by Entergy on its motion for summary disposition – evidence which the proposed intervenor did not controvert and which Entergy has not sought to offer here. Finally, a ruling in a case in which New York State was not a party cannot bind New York State, particularly where the intervenor in that case appeared without counsel. Similar to the doctrine of *res judicata*, the precept of collateral estoppel, also known as issue preclusion, prevents the relitigation of issues that already have been adjudicated. Issue preclusion applies only if the issue in the prior adjudication is identical to that in the subsequent case. Moreover, to apply the doctrine of collateral estoppel: (1) the judgment in the case must be final and entered by a court of competent jurisdiction; (2) the issue must have been the same as that actually litigated and necessary to the outcome of the first action; and (3) the party to which the estoppel is to be applied must have been a party, or in privity with a party, that litigated the issue in the prior proceeding. See 18 Moore ¶¶ 132.01[1]-[2], at 132-10 to 132-11. If so, the issue cannot be relitigated in a subsequent action with a different claim. *In the Matter of Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage

Installation), 56 N.R.C. 169, 181-82 (2002).

Here, the Board must simply consider whether Contention 16 meets the standards for admissibility at the initial pleading stage. New York State has met these standards. Contention 16 is within the scope of this proceeding, and it raises a material issue of fact about the adequacy of the SAMA analysis in Entergy's Environmental Report. It should be admitted in this proceeding.

CONTENTION 17

New York State's Contention 17 is based on 10 C.F.R. Part 51. 10 C.F.R. § 51.53(c)(3)(ii) directs applicants to draft an environmental report that includes "analyses of the environmental impacts of the proposed action, including . . . the impacts of operation during the renewal term, for those issues identified as Category 2 issues in Appendix B to subpart A of this part." Subpart A, Appendix B, Table B-1 designates "offsite land-use" as a Category 2 impact. The "required analyses" include an "assessment of the impact of the proposed action on," *inter alia*, "housing availability, land-use, and public schools (impacts from refurbishment activities only) within the vicinity of the plant." 10 C.F.R. § 51.53(c)(3)(ii)(I). As set forth in the Report of New York State's expert, "[i]t is well established that, within regulatory bounds, *land uses are determined by property values* and the uses that tend to generate the highest values." Report of Stephen C. Sheppard, Ph.D. at 2 (emphasis added)("Sheppard report")(appended to Sheppard Affidavit)("it is the market value of property that is the most significant determinant of its use and maintenance"). Moreover, the environmental report "must contain a consideration of

alternatives for reducing adverse impacts, as required by § 51.45(c), for all Category 2 license renewal issues in Appendix B to subpart A of this part.” *Id.* § 51.53(c)(3)(iii).

Notwithstanding this regulatory mandate to provide a site-specific analysis of off-site land use impacts, Entergy claims that it need not address any land use impacts other than “plant related population growth or from the use by local governments of the plants’ tax payments to provide public services that encourage development.” Entergy Answer at 114-15. To support this crabbed interpretation of its obligations, Entergy cites the GEIS and Regulatory Guide 4.2.

But the Regulatory Guide does not provide the escape hatch Entergy seeks. Entergy has an obligation to address “the impact” of the proposed action on “land-use . . . within the vicinity of the plant.” *Id.* Regulatory Guide 4.2 neither limits Entergy’s obligations nor, as mere guidance, forms the basis of Entergy’s obligations in this area. To the contrary, the Regulatory Guide itself makes clear the scope of an applicant’s obligations: “In addition to preparing the ER, the applicant should be guided by the general requirements set out in 10 CFR 51.45 and 51.55 *in addition to the provisions of* 10 CFR 51.53(c) specific to operating license renewal.” Regulatory Guide 4.2-S-4 (emphasis added). 10 C.F.R. § 51.53(c)(3)(ii)(I) directs every applicant to assess “the impact of the proposed action on . . . land-use . . . within the vicinity of the plant.” Regulatory Guide 4.2 does not limit Entergy’s obligations.

Moreover, even if Regulatory Guide 4.2 did limit Entergy’s obligations, “[r]egulatory guides are issued to describe to the public methods acceptable to the Staff for implementing specific parts of the NRC’s regulations, to explain techniques used by the staff in evaluating

specific problems or postulated accidents, and to provide guidance to applicants. *Regulatory guides are not substitutes for regulations, and compliance with regulatory guides is not required.*” RG 4.2-S-4 (emphasis added). It is clear that the Regulatory Guide does not relieve Entergy of its obligation to assess “the impact of the proposed action on . . . land-use . . . within the vicinity of the plant,” nor could it. *See infra*.

Nor does the GEIS shield Entergy from undertaking the basic analysis of the impact of relicensing on off-site property values that it failed to conduct (Entergy disputes only its obligation to discuss the impact on off-site land usage of the propose relicensing, not that it failed to address impacts on off-site land-use). Entergy mistakenly claims that New York State has not identified a “regulatory requirement or guidance document” that requires the analysis of *all* impacts of the proposed relicensing. *See* Entergy Answer at 115. Similarly, Entergy argues that there is no express requirement that it assess off-site land use impacts for purposes of the no-action alternative. *Id.* at 116. But 10 C.F.R. § 51.53(c)(3)(ii)(I) specifically tells applicants to assess “the impact of the proposed action on . . . land-use . . . within the vicinity of the plant.” It does not, as Entergy would prefer, limit an applicant’s obligation to “impacts from ‘plant-related population growth or from the use by local governments of the plants’ tax payments to provide public services that encourage development.” Entergy Answer at 115.

Likewise, GEIS Vol. 1 § 4.7.4 (“Off-site Land Use”) does not diminish Entergy’s obligation to assess all impacts of the proposed relicensing, including the adverse impacts that the relicensing will have on off-site land-use in the vicinity of the plant, as expressly and clearly

set forth in the expert report and accompanying affidavit of Stephen C. Sheppard, annexed to New York State Petition to Intervene. The GEIS specifically provides that the scope of the review of Category 2 issues is set forth in 10 C.F.R. § 51.53(c)(3)(ii). GEIS Vol. 1 § 1.7.2 (“For those issues identified as Category 2 in Table B-1, the applicant must provide a specified additional analysis beyond that contained in Table B-1. Section 10 CFR § 51.53(c)(3)(ii) specifies the subject areas of the analysis that must be addressed for the Category 2 issues”). Accordingly, Entergy has no legal basis for declining to address *all* impacts on off-site land-use, including impacts on property values, within the vicinity of Indian Point.

Dr. Sheppard’s straightforward Report, undisputed by Entergy, describes the findings of scientifically valid studies that demonstrate that nuclear power plants have a clear and statistically significant impact on residential property values, and that the impact is especially clear within the areas closely proximate to a plant. Sheppard Report at 2-3. Those studies make clear that, within two miles of a nuclear power plant, there is an adverse impact on property values (the studies also show that there is no impact on residential property values more than two miles distant from a plant). *Id.* Moving a residential property merely 10% further from the plant increases its value by 0.9%. Sheppard Report at 4.

As explained in Dr. Sheppard’s Report, 12,933 housing units are located within the two-mile area surrounding Indian Point; collectively, these residential properties have a total combined value of just over \$4.3 billion. *Id.* at 5. According to Dr. Sheppard, removing Indian Point’s negative impact on property values, by terminating its licenses at the end of their current

terms, would result in a net increase of more than \$500 million in property values. *Id.* at 6. Dr. Sheppard concluded that the increase in value was significant and “clearly sufficient to alter the decisions about land use made by the owners of the most affected properties.” *Id.*

In addition, Entergy’s site-specific analysis fails to take into account the impact on property values of denying the proposed license renewal (in other words, Entergy has failed to assess properly the impacts of the no action alternative). While denying its obligation to analyze property values, Entergy has touted the benefits to various communities of the property (and other) taxes it pays. *See, e.g.*, ER at 2-45 (Entergy contributed 39% of the Village of Buchanan’s total revenue in fiscal year 2005); *id.* (in 2002, Entergy contributed \$763 million to Westchester, Rockland, Orange, Putnam and Dutchess counties); *id.* (“Taxes and PILOT payments paid by the site have a positive impact on the fiscal condition of Westchester County, especially the school districts”). Entergy’s analysis is deficient because it takes credit for improvements to the local economy while simultaneously ignoring the adverse impacts of license renewal on off-site property values. Entergy cannot have its cake and eat it, too.

Entergy also asserts, that, to the extent New York State Contention 17 is based upon allegations regarding decommissioning, it is outside the scope of the proceeding. Specifically, Entergy complains that New York State has engaged in “baseless speculation regarding when the site would be available for unrestricted use, triggering the ‘economic recovery’ that the Petitioner envisions.” Entergy Answer at 117. Entergy ignores the fact that, if warranted by a properly conducted NEPA analysis, the conclusion of this hearing could be not only a denial of its renewal

application but an NRC order to decommission the plant at the earliest available time. New York State's citation to the NRC's decommissioning analysis, New York State Petition at 171, supports the view that decommissioning could be completed by 2025. NUREG-0586 (August 1988) at 2.4.2.

Entergy's shrill protestations notwithstanding, New York State's alleged "baseless speculation" is solidly founded on the license periods, which end in 2013 and 2015. The Contention simply employs the date of license expiration as the date on which the economic recovery described in the Declaration of Stephen Sheppard (and entirely substantively unchallenged by Staff *or* Entergy) could commence. Entergy makes the bare allegation that Contention 17, because it relies on the end of the license periods, somehow challenges decommissioning, a Category 1 issue, and is therefore beyond the scope of the proceeding. Contrary to Entergy's understanding, Contention 17 avers that the economic recovery described in Professor Sheppard's report can currently be expected to commence at the end of Indian Point's licenses – a date certain that is not in dispute and that will undoubtedly trigger a resurgence in property values of adjacent lands. (As set forth below, the Waste Confidence Rule ensures that the site can be free of spent fuel by 2025.) Entergy has not evaluated this issue and cannot, therefore, be heard to challenge Dr. Sheppard's substantive conclusions, which it has not disputed or otherwise refuted.

Entergy also attempts to characterize Contention 17 as outside the scope of the proceeding because, it asserts, the Contention is an impermissible attack on the Waste

Confidence rule, codified at 10 C.F.R. § 51.23. Entergy Answer at 117-18. This, too, is a straw man.

The Waste Confidence rule addresses the presence of spent fuel at a nuclear facility *after* the license term. It “does not alter any requirements to consider the environmental impacts of spent fuel storage during the term of a reactor operating license or combined license, or a license for an ISFSI in a licensing proceeding.” 10 C.F.R. § 51.23(c). New York State’s Contention 17 is within the scope of the proceeding because it points out Entergy’s failure to address “the environmental impacts” on adjacent lands “of spent fuel storage during the term of a reactor operating license.” *Id.*

Moreover, the Waste Confidence rule and Commission guidance, in effect, assure a host community that it can count on three things: (1) any spent fuel stored on-site after license expiration will be stored safely, 10 C.F.R. § 51.23(a); (2) “there is reasonable assurance that at least one mined geologic repository will be available within the first quarter of the twenty-first century,” *id.*; and (3) that the site can be returned to unrestricted use within 6 years after license expiration, *see* NUREG-0586 (August 1988) at 2.4.2. These facts are based on acceptance of, rather than a challenge to, the Waste Confidence rule. They demonstrate that if IP2 and IP3 are shut down in 2013 and 2015, respectively, the surrounding properties, whose economic values are depressed by at least \$500 million (*see* Sheppard Report at 5-6), could recover their value no later than 2025, when decommissioning could be completed and the spent fuel could be shipped to the “mined geologic repository” the Waste Confidence rule declares will be available.

License renewal would substantially delay the economic recovery of nearby lands, and the concomitant increase in property taxes owed on that land. Entergy's failure to analyze this impact, addressed in the Sheppard Report, is not excused by the Waste Confidence rule, which relieves an applicant only of the need to address spent fuel *after* the term of a reactor operating license and which actually buttresses the Contention.

Although Entergy does not claim that New York State Contention 17 violates § 2.309(f)(iv), Staff does. 10 C.F.R. § 2.309(f)(iv) requires that the proposed issue be material to findings that the NRC must make to support the proposed license renewal. Staff errs as a matter of law.

Remarkably, Staff first questions the NRC's own regulation, asserting that "Table B-1 is ambiguously written, and that only tax revenue changes were intended to be considered Category 2 issues." Staff's Response at 59. Based on this alleged ambiguity, Staff concludes that "the only Category 2 land-use issue required for consideration is the potential for tax-driven land use changes." *Id.* Staff lacks the power to make this pronouncement and it is virtually certain that an intervenor's claim that the plain words of a regulation were actually a mistake and should be ignored by the Board, would be quickly rejected, noting that the relief for a defect in a regulation as written is a rule-making petition. The Staff is held to no lesser standard. Informal agency interpretations such as opinion letters, agency manuals, or policy statements, are not entitled to deference. *Christensen v. Harris Co.*, 529 U.S. 576, 587 (2000).

Staff also asserts that "New York State is mistaken in its assertion that § 51.53(c)(3)(ii)(I)

requires the Applicant to consider mitigating alternatives.” Staff’s Response at 59. But, the ER “must contain a consideration of alternatives for reducing adverse impacts, as required by § 51.45(c), for all Category 2 license renewal issues in Appendix B to subpart A of this part.” 10 C.F.R. § 51.53(c)(3)(iii). Indeed, even the Regulatory Guide acknowledges that “consideration of alternatives available for reducing or avoiding these adverse effects” is required “when adverse environmental effects are identified.” RG 4.2 at 4.2-S-5 (*citing* 10 CFR § 51.45(c)). “Any ongoing mitigation should be identified and the potential for additional mitigation should be discussed. Mitigation alternatives are to be considered no matter how small the adverse impact; however, the extent of the consideration should be proportional to the significance of the impact.” RG 4.2 at 4.2-S-5. Staff’s position is without merit.

For these reasons, Entergy’s and Staff’s objections to New York State Contention 17 are baseless.

CONTENTIONS 18-22

These five Contentions are safety-based analogues of Contentions 2, 3, 13, 14, and 15. As fully explained in the legal discussion at pages 298-305 of New York State’s Petition, these safety contentions are within the scope of this proceeding because, as well-documented in Contentions 2 and 3, Indian Point does not have an ascertainable CLB and thus assertion of these safety Contentions does not violate the provisions of 10 C.F.R. § 54.30(b), the only Commission regulations that limits the scope of safety contentions in license renewal proceedings. That regulation prohibits challenges based on an allegation that there is “not reasonable assurance

during the current license term that licensed activities will be conducted in accordance with the CLB.” Contentions 18-22 do not and could not allege a failure to comply with the CLB because IP2 and IP3 have no ascertainable CLB. These contentions allege that IP2 and IP3 should not receive a license renewal because the plants are not in compliance with very specific safety regulations of the Commission.

New York State further contends that if 10 C.F.R. § 54.30(b) is not applicable, then the requirements of 10 C.F.R. § 54.33(a) are fully applicable to this proceeding and an intervenor is able to challenge the proposed license renewal based on an applicant’s failure to be able to meet the requirement that “each renewed license will contain and otherwise be subject to the conditions set forth in 10 CFR 50.54.” *Id.* Among the conditions in 10 C.F.R. § 50.54 are requirements related to an updated UFSAR, commitment to and compliance with the legally relevant GDC, Appendix R fire protection and Part 100 earthquake protection. Similarly, where, as here, the limitations of 10 C.F.R. § 54.30(b) are not applicable, an intervenor is able to contest whether the holder of a proposed renewed license will “continue to comply with all Commission regulations contained in 10 CFR Parts 2, 19, 20, 21, 26, 30, 40, 50, 51, 52, 54, 55, 70, 72, 73, and 100, and the appendices to these parts that are applicable to holders of operating licenses or combined licenses, respectively.” 10 C.F.R. § 54.35. If the applicant is not currently in compliance with those regulations, it is not possible that it will “continue to comply with all Commission regulations.”

At no time do either Entergy or Staff directly join issue with this legal argument or even

argue that IP2 and IP3 have an ascertainable CLB in light of the plant's lack of compliance with 10 C.F.R. § 50.71(e) and the plant's commitment to a set of GDC that have never been adopted by the Commission.⁴¹ Instead they argue that these five contentions have nothing to do with plant aging.⁴² But, as noted above, the scope of the license renewal analysis is not limited to plant aging. The provisions of 10 C.F.R. §§ 54.33 and 54.35 add non-aging safety issues to the license renewal analysis and neither of those requirements is limited to plant aging considerations.

The touchstone of the scope of the license renewal issues is identified by Entergy in its

Answer:

The Commission has stated that “[a]djudicatory hearings in individual license renewal proceedings will share the same scope of issues as our NRC Staff review, for our hearing process (like our Staff’s review) necessarily examines only the questions our safety rules make pertinent.”

Id. at 22 (footnote omitted). A critical part of the “Staff review” is assuring that the provisions of 10 C.F.R. §§ 54.33 and 54.35 are met. For example, in the Safety Evaluation Report Related to

⁴¹ Entergy and Staff offer “bare assertions” about whether there is sufficient supporting evidence for each Contention or whether each Contention identifies with sufficient specificity the point of disagreement with the LRA. Since they make no effort to address the specific allegations contained in each Contention and the supporting evidence provided, these “bare assertions” should carry no more weight than if they had been contained in New York State’s Contentions.

⁴² Entergy and Staff reference their earlier arguments against Contentions 2, 3, 13-15. New York State incorporates by reference here its earlier response to those argument in this Reply.

the License Renewal of Palisades Nuclear Plant (NUREG 1871) the following appears:

Each year, following the submittal of the Palisades License Renewal Annually March 22, 2005 Letter Application and at least three months before the scheduled completion of the NRC review, NMC will submit an amendment to the application pursuant to 10 CFR 54.21 (b). This amendment will identify any changes to the Current Licensing Basis of the facility that materially affect the contents of the License Renewal Application, including the FSAR supplement, that have not already been submitted.

Id. at Appendix A, A-3. This condition applies at any time after the license renewal application is filed, covers years prior to the original expiration date of the license and essentially imposes the 10 C.F.R. § 50.71(e) requirements on the licensee. There is no question that issues raised in Contentions 18-22 are within the scope of the Staff review of the license renewal application.

In short, only the limitations of 10 C.F.R. § 54.30(b) prevent an intervenor from exploring an applicant's compliance with other safety regulations of the Commission and where, as here, 10 C.F.R. § 54.30(b) is not applicable, there is not, and should not be, a restriction on the right of an intervenor to question whether, if the license is renewed, the plant will be operated in compliance with specific Commission safety requirements such as those identified in Contentions 18-22. These two plants, IP2 and IP3, not only do not have an ascertainable CLB, they are in serious violation of important safety regulations. These plants should not be allowed to extend their operation unless and until they come into compliance with all safety regulations.⁴³

⁴³ New York State is not seeking, in this proceeding, an enforcement remedy in the form of a shutdown of the two units. It is likely that such a request would have to be made pursuant to 10 C.F.R. § 50.100 which, if the violation is well-established and the assistance of Staff is not requested, can be made directly to the Commission without invoking the cumbersome process in

Staff essentially repeats the same arguments advanced by Entergy with a couple of exceptions. Staff asserts, in response to Contention 19 that the Draft GDC “were not binding requirements.” Staff Response at 62. As noted earlier, that assertion is demonstrably false as the Staff routinely issues violation notices to older plants based on violations of the Draft GDC. The Staff also asserts that licensees were free to comply with the criteria proposed by the AIF and did not have to meet the requirements of the Draft GDC. But the only citation for this remarkable assertion that the Commission ceded its regulatory responsibility to a trade association is reference to a letter from the trade association. Staff Response at 62, n. 52.

In response to Contention 20, Staff adds that because it challenges the unilateral, and unreviewable, action of the Staff, it raises the specter that no waiver of a Commission regulation could ever be approved under 10 C.F.R. § 50.12.⁴⁴ Staff Response at 64. This *reducto ad absurdum* argument cannot stand. The only such waivers that can be challenged are those, like this one, that are without sufficient technical support to withstand scrutiny and that, if allowed to stand, will illegally compromise the public health and safety.

Finally, Staff attacks Contention 22 because it challenges the earthquake analyses for IP2 and IP3 that were done under the CLB and UFSAR for the plants. Staff Response at 70.

10 C.F.R. § 2.206.

⁴⁴ In the event that New York State finds it necessary, after achieving party status, to seek its own waiver of Commission regulations, New York State will compare the procedures and standards applicable to waiver of Commission regulations and discuss the process used by the Staff to unilaterally grant IP3 a waiver of a Commission regulation. For now, the issue is whether that waiver can be challenged in this proceeding.

However, the Staff fails to join issue with the substantial evidence presented that the UFSAR is legally deficient and the CLB is unascertainable. Thus, any earthquake analysis done based on the UFSAR and CLB is flawed from the outset. In addition, Contentions 21 and 22 identify very specific information that was not included in the earthquake analyses done for these plants and supports that identification with the declarations of two of the most respected earth scientists from the most respected center of earth science in this area. Staff makes no effort to rebut these well-supported allegations to show how this new and significant information was properly used in assessing the earthquake safety of these plants.

CONTENTION 23

Contention 23 asserts that the application fails to provide for a comprehensive baseline inspection. Such a baseline inspection would furnish a means for examining the changes that the plants' systems, structures, and components have experienced over the design life of these plants, and a known benchmark from which to evaluate operator and plant performance over the subsequent twenty-year period of extended operations. Instead of readily acceding to this basic engineering principle, both the NRC Staff and Entergy oppose this contention on the grounds that NRC regulations do not require this specific type of inspection and testing. The NRC Staff and Entergy are wrong in their objection to Contention 23.

Entergy misconstrues the basis of New York State's contention. New York State did not assert, as Entergy states, that an Integrated Plant Assessment ("IPA") had not been undertaken. New York State's concern is with the inspections that will be done in the years to come. Those

inspections are only as good as the baseline against which they are measured and the results are tracked and trended for rate of degradation. New York State asserts the need for a much more extensive characterization of the plant than Entergy has performed to date. This is needed to develop an adequate aging management plan. New York State's expert, Dr. Richard T. Lahey, Jr., explained that "the inspections should involve both visual and physical characterization and the non-destructive testing ("NDT") of at least the RPV, the RPV heads/fittings, the control rod drive mechanisms and associated RPV perforations, most RPV internal hardware, and all key welds and fittings in the primary and secondary systems of the reactors." Lahey Declaration ¶ 24.

Additionally, NRC regulations require that the "FSAR supplement for the facility must contain a summary description of the programs and activities for managing the effects of aging and the evaluation of time-limited aging analyses for the period of extended operation determined by paragraphs (a) and (c) of this section, respectively." 10 C.F.R. § 54.21(d). The summary nature of the testing proposed by Entergy throughout its application, and specifically in Appendix B of the LRA, does not provide sufficient information, however, to determine what this testing may entail. Lahey Declaration ¶¶ 26, 27. While Entergy argues that it has provided an appropriate summary description (Entergy Answer at 126-29), that description in fact fails to provide sufficient depth from which analysis or conclusions can be drawn. Lahey Declaration ¶ 26.

By its very nature, managing aging materials, particularly those in older nuclear reactors, becomes extremely important during periods of extended operation. The original design of some

components, again particularly within a nuclear reactor seeking permission to continue operations for an additional twenty years, may have been based explicitly upon a then assumed service life of forty years. *In the Matter of Florida Power & Light Company* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-01-17, 54 N.R.C. 3 (2001). In fact, a specific design life must be, and in fact is, established by the plant's vendors to guide the design and procurement of all nuclear reactor components, e.g., pumps, fuel, in-core apparatus, control rod drives, etc. This is all information that Entergy has in its possession – information that the Commission and New York State should be given a chance to inquire about in a more comprehensive way. *See In the Matter of Entergy Nuclear Vermont Yankee, L.L.C., and Entergy Nuclear Operations, Inc.*, (Vermont Yankee Nuclear Power Station) 50-271-LR, LBP-07-15, 07-15 (2007). A plant's design life, once established, is not arbitrary; it has significant safety implications for extended plant operations.

As for the existence of a genuine dispute regarding a material issue of law or fact, while Petitioners seeking to intervene in the license renewal process need only to establish that they are entitled to cognizable relief, they are not required to withstand a summary disposition motion or prove their contention at the admissibility stage. *See In the Matter of Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 N.R.C. 142, 179 (1998); *In the Matter of Entergy Nuclear Vermont Yankee, L.L.C., and Entergy Nuclear Operations, Inc.*, (Vermont Yankee Nuclear Power Station), 50-271-LR, LBP-07-15 (2007). They are simply required to provide sufficient information to show that a more comprehensive inquiry is

warranted. *Id.* A contrary conclusion would improperly turn the admissibility factors in 10 C.F.R. § 2.309 into a fortress for denying intervention. *Oyster Creek*, LBP-06-07, ASLBP No. 06-844-01-LR, 50-0219-LR (2006).

In summary, the arguments raised by the Staff or Entergy do not remove or even counter the concerns over the need for an appropriate baseline inspection that New York State raised in Contention 23.

CONTENTION 24

Contention 24 contends that because the IP2 and IP3 containment structures were not constructed according to current specifications for the water/cement ratio, enhanced inspections are required. Both the Staff and Entergy oppose this contention.

The Staff oppose this contention on the ground, among others, that this contention raises a current operating or compliance issue, which is not reviewable in a license renewal proceeding. Staff Response at 74. However, the Staff does not in fact assert that the concern over the water/cement ration is in fact addressed as a current operating or compliance issue. This sets up an impossible situation: according to Staff, the issue cannot be considered in a license renewal proceeding because it is a current operating or compliance issue, but it is in fact not addressed as a current operating or compliance issue.

In addition, the focus of the Contention is not on current activities. The focus is the program that Entergy proposes - or in this case, does not propose - for future operations under an extended licensing term. The supporting evidence, including the expert Declaration of Dr.

Richard T. Lahey, Jr., explains why, in the period of extended operation, it is necessary to conduct enhanced inspections of critical cement structures at both plants. Lahey Declaration ¶ 29. The fact that similar criticism could be made to the current programs is irrelevant since the Contention is focused only on the renewal term, which would begin with the date license renewal is approved, if such approval is granted. 10 C.F.R. § 54.31(b).

Entergy also opposes this contention on the grounds that containment integrity is addressed as a current licensing basis issue. Entergy Answer at 131. Similar to the infirmity in the Staff's position, Entergy does not point to where this water cement ratio is in fact addressed as a current licensing basis issue. Entergy begins by citing *Turkey Point* (CLI-01-17), 54 N.R.C. at 7, to argue that reassessing a safety issue would be unnecessary and wasteful. Entergy Answer at 131. Such an argument cannot be made in the present matter, though, as the current requirements for water/cement ration in the containment structures at a nuclear facility were not even in existence at the time IP2 and IP3 were built. Also, whether it is being addressed as a current licensing basis issue or not, the fact is that in the future, "enhanced" inspections are required, and there is no commitment to such inspections.

Entergy further cites *In the Matter of Florida Power & Light Company* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-01-06, 53 N.R.C. 138, 159, in support of its statements that contentions advocating more than what the Commission's regulations require are outside the scope. Entergy Answer at 132. That *Turkey Point* decision is distinguishable from the present matter as that potential intervenor was demanding that the applicant study the

probability of a potential hurricane causing multiple component failures, and that the applicant include this analysis in its site specific supplemental environmental assessment statement. *Id.* New York State seeks nothing like that here from Entergy.

Management of the integrity of the containment concrete is undeniably an aging management issue. *See* LRA at p. 3.5-6 and Appendix B at B.1.7 and B.1.8. The issue raised by the Contention is whether, because the cement/water ratio exceeds the range set by the NRC, Entergy should be required to conduct enhanced inspections rather than the routine inspections now proposed in the LRA. NUREG-1801 specifically identifies plants, like Indian Point, which experience severe winter weather conditions and have water/cement ratio outside the 0.35 to 0.45 range, and which will require enhanced inspections of inaccessible concrete. NUREG-1801, Rev.1. The GALL Report recommends further evaluation of programs to manage loss of material (spalling, scaling) and cracking due to freeze-thaw in below-grade inaccessible concrete areas of Groups 1-3, 5, and 7-9 structures. Structures monitoring program may not be sufficient for plants located in moderate to severe weathering conditions. *Id.* at 3.5-12. New York State's expert, Dr. Lahey, relying in part on these analyses, has concluded that Indian Point requires enhanced inspections and notes that no such enhanced inspection programs are included in the LRA, citing to the relevant portions of the LRA. Entergy never demonstrates why this analysis is not sufficient to meet the contention admissibility requirements.

Entergy cites to another *Turkey Point* decision, *In the Matter of Florida Power & Light Company* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-90-16, 31 N.R.C. 509,

521, n.12) in an attempt to say that in order to assert an admissible contention, a petitioner must directly controvert a position taken by Entergy. Entergy Answer at 134. Here, Dr. Lahey directly contradicts Entergy's assertion that routine inspection programs are sufficient for containment concrete - they are not sufficient. Lahey Declaration ¶¶ 28-30.

This Contention highlights, over the extended period of operation, the safety implications of the two different water/cement ratio standards: (1) ACI-318 that was in effect for construction of IP2 and IP3 (as stated in the LRA), and (2) the GALL Report, issued after construction of IP2 and IP3 was complete. While the GALL Report was adopted after the construction of IP2 and IP3, the enhanced inspections that are recommended by the GALL Report are the ones applicable here. New York State offers the GALL Report recommendations as evidence in support of this Contention along with the Declaration of Dr. Lahey, and has therefore clearly identified a genuine issue of disputed fact or law.

CONTENTION 25

Contention 25 asserts that Entergy has not proposed an adequate plan to monitor and manage the effects of aging due to embrittlement of the reactor pressure vessels (RPVs) and the associated internals. Both the Staff and Entergy oppose this contention, primarily on the ground that New York State has not pointed to an error or omission of required information from the license renewal application and thus has not demonstrated that a material issue exists for license renewal. Entergy further derides New York State's expert, Dr. Richard T. Lahey, Jr., a nationally prominent nuclear engineer who is a member of the faculty of Rensselaer Polytechnic Institute,

by stating that he “merely states conclusions” and confuses embrittlement of the RPV with embrittlement of the reactor vessel internals. *Entergy Answer at 135-41*. None of these arguments have merit.

Dr. Lahey explained in his Declaration that it is well known that a decompression shock created during the subcooled decompression phase of the original design basis accident (DBA) loss of coolant accident (LOCA) can create significant transient pressure differentials across several structures and components within the reactor. Lahey Declaration ¶ 15. Experiments have shown that, when ductile, these components are not likely to deform to the point where a coolable geometry cannot be maintained. *Id.* Entergy has not established in any experiments the stability of the components of its facility. *Id.* In fact, the two experiments that were performed on samples from the reactors at Indian Point indicate that damage caused by irradiation embrittlement is a significant concern; one that must be considered before any decision on renewing the licenses for Indian Point 2 and 3 is made. *Id.*

Entergy claims that New York State has not directly controverted a position that the Applicant has taken in the LRA and that no material issue is thus presented. *Entergy Answer at 135-41*. Entergy is wrong. In his Declaration, Dr. Lahey identifies specific sections of the LRA that address embrittlement. See Lahey Declaration ¶¶ 14, 15, 16, 18. Based on his review of the LRA, Dr. Lahey concluded that embrittlement and/or fatigued incore bolts, structures, and their associated welds (*see* RAI 4.2.5-1, at 2), when subjected to significant transient loads, may fail and result in an uncoolable core geometry subsequent to postulated accidents. Lahey Declaration

¶ 15. In fact, the breadth of Entergy's response to Dr. Lahey's statements establishes that a material issue is presented.

The NRC regulations also provide that a contention is admissible when a petitioner demonstrates that an applicant has *not* addressed an issue in its LRA. *See* 10 C.F.R. § 2.309 (f)(1)(vi). Here, too, Dr. Lahey demonstrated that the applicant failed to address a number of issues related to embrittlement in its application. *See, e.g.*, Lahey Declaration ¶ 14 (the LRA "does not indicate if the applicant performed any age-related accident analyses, or even if it took embrittlement into account when assessing the effect of these transient loads"); Lahey Declaration ¶ 15 ("Entergy's failure to discuss how embrittled RPVs and RPV internal structures and components would respond to the highly transient severe decompression shock loads associated with a DBA LOCA is a very serious omission from its relicensing application"); ¶ 16 (referencing Entergy's omission of experiments).

A petitioner seeking to intervene in a license renewal process must establish only that it is entitled to cognizable relief; the petitioner is not required to withstand a summary disposition motion or prove its contention at the admissibility stage. *See In the Matter of Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 N.R.C. 142, at 179 (1998); *In the Matter of Entergy Nuclear Vermont Yankee, L.L.C., and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), 50-271-LR, LBP-07-15 (2007). A petitioner is simply required to provide sufficient information to show that a more comprehensive inquiry is warranted. *Id.* A contrary conclusion would improperly turn the

admissibility factors in 10 C.F.R. § 2.309 into a fortress for denying intervention. *In the Matter of Amergen Energy Company, L.L.C.*, (License Renewal for Oyster Creek Nuclear Generating Station), LBP-06-07, ASLBP No. 06-844-01-LR, 50-0219-LR (2006).

In summary, the point of Contention 25 is that during extended plant operations, severe thermal and/or decompression shock loads (e.g., the plants' original design basis LOCA loads), may seriously damage an aged and embrittled core so that a coolable core geometry can not be maintained. Significantly, it is during extended operations when a design basis LOCA is most likely to occur and result in fuel melting and significant radiation releases. Accident analyses of the type that New York raised in Contention 25 are sorely needed to ensure safe operations during extended plant operations.

CONTENTION 26

Contention 26 asserts that the Applicant failed to account for metal fatigue on key reactor components. Entergy's own analyses in the LRA that it submitted on April 23, 2007, demonstrated that a number of key reactor components have cumulative usage factors (CUFs) of greater than 1.0 and thus exceed the upper limit for CUF. LRA Tables 4.3-13 and 4.3-14. The Entergy's analysis also shows that certain components in both IP2 and IP 3 have CUFs of 0.99 (RCS piping charging systems nozzle) and 0.9612 (Pressurizer surge line nozzles) respectively. *Id.* These figures are approximately a year old at this point, and with continued operations at these facilities, must now also be presumed to have CUFs greater than 1.0. Despite these patent exceedences of the CUF, Entergy did not immediately identify a plan to repair and replace those

components, but instead proposed that at some unknown point in the future it would choose from one of three options: (1) it would further refine the fatigue analyses, (2) conduct an inspection program, or (3) "repair or replace the affected locations before exceeding a CUF of 1.0."

Contention 26 is based on (1) the failure of the LRA to actually propose any specific program and thus its failure to provide any details of a program, and (2) the failure of the LRA to choose option 3 - repair or replacement of the components that Entergy has already identified as exceeding the 1.0 CUF.

New York State has now demonstrated the inequity and impropriety of Entergy's first proposal - to "further refine" the fatigue analyses, but essentially to redo the calculations to make the problem go away - because the time to properly perform those calculations was in the original LRA. Indeed, the NRC's rules provide that any petitioners must raise contentions based on the LRA at the time that the petition raising contentions is filed. 10 C.F.R. § 2.309(f)(2).

Finally, the Contention also demonstrated that the second proposal - to "conduct an inspection program" was an ill suited response for components that Entergy has already determined exceed a 1.0 CUF.

In its answer to the New York State petition, the Staff did not oppose New York State's contention "to the extent that it challenges how the LRA demonstrates that it satisfies the elements of 10 C.F.R. 54.21 (c)(1)(iii) for the CUF." A similar contention has also been admitted in Vermont Yankee (64 N.R.C. 131, 183 (2006)) concerning a critique of Entergy's calculations of environmental fatigue correction factors, and a critique of the calculations of

60-year CUFs. Staff Response at 7, fn 57. Entergy, however, did oppose this Contention.

Entergy claims that the Contention lacks specificity and basis; lacks adequate support of facts or expert opinion; and fails to establish a genuine dispute on a material issue of law or fact. Entergy Answer at 142. Despite these claims, Entergy's considerable effort to refute the very specificity, basis, facts, and expert opinion it asserts is absent from the Contention disproves its own argument. Indeed, Entergy's response establishes that there is a genuine dispute on a material issue of law and fact.

To further demonstrate its significant concern about the viability of New York State's metal fatigue contention, and on the day that it filed its answer, January 22, 2008, Entergy submitted notice to the NRC of its intent to file a substantial LRA Amendment solely addressing this contention on metal fatigue.⁴⁵ This "Amendment" was submitted through a letter, also dated January 22, 2008, from Fred R. Dacimo, Entergy's Vice President for License Renewal.⁴⁶ The letter states that "this information clarifies that relationship between Commitment 33 regarding environmentally assisted fatigue and the Fatigue Monitoring Program described in LRA Section B.1.12."

⁴⁵ Although Entergy referred to this submission in its Answer, it did not include a copy of it with the Answer. Indeed, it was not posted on ADAMS until February 6, 2008. ADAMS ML080290659.

⁴⁶ Curiously, although the letter ends with a declaration under penalty of perjury that the information is true and correct, and that it was executed on January 22, 2008, the letter itself was signed by someone else for Mr. Dacimo. Given this proxy on a document that was submitted under penalty of perjury, New York State questions Entergy's accountability here.

Whether Entergy's submission is cast as a "clarification" of the April 23, 2007, LRA or an "amendment" to it, this submittal does not invalidate Contention 26, but rather confirms the validity of this Contention.

Fundamentally, Entergy's late filing cannot eliminate Contention 26 because, as notes above, New York State's Petition was required to be based upon, and thus must be judged by, the information available at the time the Petition was filed. 10 C.F.R. § 2.309(f)(2). The NRC has established an exacting regulatory process for filing an LRA and contentions based upon it. What Entergy has done is precisely what New York State anticipated in the petition - that Entergy would rework the CUF analysis to arrive at a result that, in Entergy's view, would remove the concern. Entergy's *post hoc* reworking of the numbers speaks for itself - it has borne out New York State's prediction. *See also* Contention 1, which notes that Entergy employed this same tactic when it was faced with the same issue in the *Vermont Yankee* proceeding. Since it apparently cannot learn from its past mistakes, it certainly should not be allowed to benefit from repeating them.

If Entergy were allowed to rely on information it could have submitted months ago but only submitted long after petitions to intervene were due, Entergy and other operators will never be required - or inclined - to offer their "best analysis" in the initial filing of the LRA. These companies can file their initial applications, wait and see not only who files a petition but also what those petitioners say in their petitions, and then make any changes to their application they feel are needed to address the contentions raised. This Board should not sanction any operator's

chameleon-like approach to relicensing. The time for Entergy to offer its substantive response to the Contention, whether by way of license amendment to address the concern or otherwise, is after the Contention has been admitted.

Entergy states that the NRC approved similar commitments at two Arkansas plants. Entergy Answer, fn .609. Even assuming that these commitments are similar, the NRC issued its approvals in April 2001 at the Arkansas Nuclear One, Unit 1 plant (NUREG-1743) and June 2005 at the Arkansas Nuclear One, Unit 2 plant (NUREG-1828). More astonishing is that Entergy is the operator and licensee of both of these plants. Thus, Entergy had plenty of notice and opportunity to incorporate these commitments into its license renewal application for Indian Point, which it filed in April 2007. Instead, it sat back, waited to see if the issue was raised in this proceeding, and then adapted - using information that it had available and should have incorporated into the April 2007 application.

This evolving application process is inconsistent with the principle that admissibility regulations are “strict by design,” and may have repercussions in relicensing matters nationwide.⁴⁷

New York State and other petitioners also have an expectation that the Board will apply the NRC rules fairly across the board. To illustrate, just as Entergy has sought successfully in other cases to strike “new material” raised in a reply, so, too, should the Applicant’s new material

⁴⁷ It may also represent a litigation strategy to present a constantly moving target to sap a challenger’s resources. *See* Contention 1.

raised for the first time in an answer be stricken. *In the Matter of Entergy Nuclear Vermont Yankee, L.L.C.*, (Vermont Yankee Nuclear Power Station), 50-271-LR, LPB 06-20, ASLBP No. 06-849-03-LR (2006).

Additionally, Entergy's late-filed "clarification/LRA Amendment" demonstrates that it has not removed New York's concern. Until Entergy actually provides the details of the "fix" it proposes and makes that a part of the LRA, there is no credible evidence that Contention 26 is not valid. In addition, the "evidence" that Entergy offers may be useful if it chooses to file a motion to "moot" Contention 26, but has no bearing at this stage of the proceeding on whether the Contention is admissible.

While Entergy is now abandoning its proposal, advanced in its LRA dated April 23, 2007, to conduct inspections as a response to key reactor components that have a CUF of greater than 1.0, it is retaining its proposal to at some unknown point in the future perform a "refined fatigue analyses" to account for the effects of reactor water environment. However, more mechanistic calculations of this type must be carefully reviewed and bench-marked against appropriate data to verify their accuracy. Entergy gives no details on how this will be done and thus New York State - and the NRC - can not assure their validity. A methodology, where such important calculations that are not part of the LRA are performed at some unknown point following approval of the renewal application, simply can not demonstrate that Entergy has satisfied the required elements of 10 C.F.R. 54.21(c)(1)(iii).

Entergy is *not* proposing to immediately repair or replace the key reactor components that

it now knows will exceed the 1.0 CUF measurements during extended operations. Lahey Declaration at 8-10. These components for IP2 are the pressurizer surge line piping and the RCS piping charging system nozzle. The components at issue for IP3 are the pressurizer surge line piping and the pressurizer surge line nozzle. The prudent thing to do is to replace these primary pressure boundary components before the onset of extended operations. Entergy, however, is not proposing to take this prudent and necessary course of action.

In conclusion, what Entergy has proposed on metal fatigue merely confirms the validity of Contention 26, its relevance to aging management and license renewal and the seriousness of the issues raised.

CONTENTION 27

Contention 27 demonstrates that the Environmental Report (1) fails to consider the consequences of a terrorist attack on the spent fuel pools and how the radiological release from such a severe accident would impact surrounding communities and (2) fails to analyze the necessary mitigation measures to reduce the effects of such a radiation release as required by NEPA. Neither the Generic EIS nor the *Environmental Report* have analyzed the consequences of a radiological release from the unprotected spent fuel pools at Indian Point. Staff Response and Entergy's Answer do not refute the potentially significant and devastating impacts of a release of radioactive material currently stored in the spent fuel pools at Indian Point, nor do they address that terrorism is a "credible" threat to Indian Point. The notion that such a possibility is too remote for analysis is antithetical in a post-9/11 world, particularly given the National

Academy of Sciences analysis and conclusions set forth in New York State's Petition.

Entergy and Staff oppose the spent fuel pool contention because they argue that the issue raised by New York State was addressed in the 1996 Generic EIS for nuclear facility license renewals. Regarding the environmental impacts of sabotage on nuclear facilities, Entergy and the Staff rely on the statement in the Generic EIS that "if such events were to occur, the commission would expect that resultant core damage and radiological releases would be no worse than those expected from internally initiated events." Entergy Answer at 152; *see also* Staff Response at 102.

Contention 27 and supporting documents establish that the Generic EIS analysis is outdated and flawed with respect to analysis of this severe accident scenario. New York State's Petition plainly demonstrates that these Generic EIS conclusions on this issue are without merit. Thus, all conclusions that logically follow this factually inaccurate analysis and conclusion are equally flawed. New York State Petition, Contention 27 at 241-44. Further, the Generic EIS provisions cited by Entergy and Staff in opposition also fail to offer any analysis of mitigation measures as required by NEPA. Contention 27 must be admitted in this proceeding to require a full and accurate analysis in the *Environmental Report* as required by NEPA. *See also In the Matter of Florida Power & Light Company*, CLI -01-17, 54 N.R.C. 3 (July 19, 2001) ("*Turkey Point*") at 12.

New York State's Contention is supported by the Declaration of Dr. Richard T. Lahey, Jr., which demonstrates that the 1996 Generic EIS conclusions on this subject are no longer

factual or adequate, particularly given the events of September 11, 2001. The facts, evidence, and analysis provided by Dr. Lahey are not contradicted by either Entergy or Staff. Dr. Lahey is one of the foremost experts on the threats to spent fuel storage systems at nuclear facilities and is a co-author of the 2005 National Research Council of the National Academies on the subject. New York State Petition, Contention 27 at 234–37. The environmental impacts are clearly set forth in New York State’s Petition: because spent fuel pools are “not enclosed by a leak-tight containment structure,” a “terrorist attack that leads to pool drainage and propagating zirconium fire would disperse a significant amount of radiation to the environment,” and “that there is a credible threat of intentional attacks.” New York State Petition, Contention 27 at 238, 240, 243, 244. New York State’s Petition even points out that there are several possible mitigation measures to consider, such as “rearrangement of the spent fuel in the storage pools and spray cooling,” but that “Entergy has not indicated in its relicensing application that it has adopted these mitigation measures.” Lahey Declaration at pp 36, 37. Thus, the NRC’s failure to acknowledge the spent fuel pool issue has resulted in no valid analysis of these environmental impacts from sabotage, intentional acts, or terrorism, and no concomitant analysis of mitigation of these potential impacts as required by NEPA, particularly with regard to the consequences of that action. 40 C.F.R. § 1502.16(h), *Robertson v. Methow Valley Citizens Counsel*, 490 U.S. 332, 335 (1989).

As New York State has clearly set forth in its Petition and NEPA Scoping Comments in these license renewal proceedings, neither Entergy nor the Staff can hide behind outdated and

stale analyses in the 1996 Generic EIS that are plainly contradicted by the facts, especially since the NRC is obligated to update the Generic EIS and has failed to do so. Its failure is further magnified by the nature of this contention – terrorist attacks – and the fateful events of September 11, 2001. That the Staff and Entergy continue to rely on this stale, pre-September 11th analysis in this proceeding is nothing short of astonishing.

Entergy and Staff also oppose the spent fuel pool contention because they argue that Commission precedent establishes that “an applicant’s failure to consider terrorist attacks in its ER are beyond the scope of license renewal, and that such consideration is not required under NEPA.” Staff Response at 102; *see also* Entergy Answer at 150–51. The argument is based upon the fact that intentional acts such as sabotage were “considered” in the 1996 Generic EIS. Staff and Entergy cite the Generic EIS language that concludes that with respect to intentional attacks “resultant core damage and radiological releases would be no worse than those expected from internally initiated events” and that the risks of such acts are small. Staff Response at 102, Entergy Answer at 152. Entergy concludes that “no separate NEPA analysis is required to evaluate the potential environmental impacts of a terrorist attack, because the GEIS analysis of severe accident consequences bounds the potential consequences that might result from a large scale radiological release, irrespective of the initiating cause.” Entergy Answer at 152, citing *Oyster Creek*, 65 N.R.C. at 131. Entergy also argues that the *San Luis Obispo Mothers for Peace* decision does not apply in this Circuit by citing the Commission statement that “it is not is not obliged to adhere, in all of its proceedings, to the first court of appeals decision to address a

controversial question.” Entergy Answer at 151, citing *Oyster Creek*, 65 N.R.C. at 130. In *Oyster Creek*, the Commission stated that “unlike the situation in that case [*San Luis Obispo*], a license renewal application does not involve new construction. So there is no change to the physical plant and thus no creation of a new “terrorist target.” Entergy Answer at 151.

The NRC precedents cited ignore the facts and circumstances presented in Contention 27 and the Lahey Declaration that potentially adverse environmental impacts would result from the destruction of the spent fuel pools, which are outside of Indian Point’s containment structures. These impacts are quite unlike the referenced Generic EIS analysis that looks at risk associated with a release from *inside* a containment structure. Based upon such disparate and distinctly different analyses, the NRC precedents relied upon by Staff and Entergy are inapposite to the issue presented here. The Generic EIS conclusions on this issue are defunct and unsupportable as they apply to Indian Point and the environmental impact analysis required under NEPA. Simply stated, the Staff, the Commission, and Entergy got it wrong -- the “GEIS analysis of severe accident consequences” does not bound “potential consequences that might result from a large scale radiological release” because it only took into consideration a hardened and leak-proof containment structure around the nuclear core that does *not* exist for spent fuel pools. Thus, the environmental impacts of this type of severe accident at the spent fuel pools raised in Contention 27 has never been addressed, nor have possible mitigation measures, despite what NRC precedent may argue.

Moreover, the federal Environmental Protection Agency (“EPA”) has rejected the Staff

and Entergy argument that this Board need not consider the consequences of intentional destructive acts such as a terrorism attack on the Indian Point spent fuel pools. EPA has requested that the NRC include in the license renewal EIS “[a]n analysis of the impacts of intentional destructive acts (e.g., terrorism).” Letter of Grace Musumeci, Chief, Environmental Review Section, US Environmental Protection Agency, Region 2 to Chief, Rules and Directives Branch, Division of Administrative Services, US NRC, October 10, 2007, ADAMS ML072960360.

The NRC is alone among federal agencies which are more fully integrating terrorism in their regulatory structure. See New York State Petition, Contention 27 at 237-240 (listing the numerous actions taken by various federal agencies to directly respond to the terrorism threat since 9/11.)

Contention 27 is supported by adequate factual information and evidence to establish that a genuine dispute exists between the State of New York and Entergy on an issue of material fact or law meeting the requirements of 10 C.F.R. § 2.309(f)(1)(vi). The State of New York asserts that the law requires nuclear generating facilities, as part of the environmental review of a license renewal, to analyze and assess mitigation measures to address severe off-site radiological releases from compromised spent fuel pools. Entergy has not assessed or analyzed any such mitigation measures in the *Environmental Report*, even though they and Staff do not refute or contradict the underlying factual information of New York State on the consequences of a severe accident such as a terrorist attack on the unsecured spent fuel pools.

In conclusion, the consequences of an off-site radiological release of significant amounts of radioactive material “that are several times greater than those contained in individual reactor cores” (New York State Petition, Contention 27 at 235) are severe. If these facilities are granted a license renewal, more and more radioactive spent fuel will be created and stored on-site in unsecured spent fuel pools. The analysis and mitigation of the impacts of a spent fuel pool severe accident is not only required by NEPA, but based upon the current understanding of the threat to these facilities and the widely understood mitigation measures, they are also necessary and material to a NRC license renewal determination. Nonetheless, the *Environmental Report* does not analyze or evaluate these environmental impacts and their mitigation measures as required by law. Thus, Contention 27 should be admitted by the Board in its entirety.

CONTENTION 28

Contention 28 demonstrates that a variety of radionuclides are leaking into the groundwater of the Indian Point site and into the Hudson River from the spent fuel pools for IP1 and IP2. Entergy’s *Environmental Report* identifies these leaks of radionuclides as “new Information” in the license renewal submittal to the NRC. The information is new and significant, as New York State’s Petition makes clear. The *Environmental Report*, however, fails to address the potential environmental impacts of these leaks and fails to analyze mitigation measures to address them as required by NEPA. Thus, Contention 28 meets the requirements of 10 C.F.R. § 2.309 and must be admitted in this proceeding.

Staff opposes the admission of New York State’s Contention 28 because Staff claims that

the contention constitutes an impermissible challenge to Commission regulations, is beyond the scope of this proceeding, and fails to raise a genuine dispute as to a material issue of law or fact. NRC Staff Response at 79.

Entergy opposes the admission of Contention 28 on the grounds that it raises issues that are outside the scope of license renewal by positing stricter requirements than the NRC's license renewal regulations impose, contrary to 10 C.F.R. § 2.309(f)(1)(iii); lacks adequate factual and/or expert support, contrary to 10 C.F.R. § 2.309(f)(1)(v); and fails to establish a genuine dispute with Entergy on a material issue of law or fact, contrary to 10 C.F.R. § 2.309(f)(1)(vi). Entergy Answer at 154. As demonstrated below, the objections of both the Staff and Entergy have no merit.

A. Contention 28 is within the scope of this proceeding and is not an impermissible challenge to Commission regulations.

The NRC's regulations require that an applicant's "environmental report must contain any new and significant information regarding the environmental impacts of license renewal of which the applicant is aware." 10 C.F.R. § 51.53(c)(3)(iv). Applicable Council on Environmental Quality (CEQ) implementing regulations for NEPA provide that federal agencies should prepare environmental impact statements for actions that would significantly affect the environment; focus on significant environmental issues; and eliminate from detailed study issues that are not significant. 40 C.F.R. § 1502.3; 40 C.F.R. § 1502.1; 40 C.F.R. § 1501.7(a)(3). The CEQ guidance includes a lengthy definition of "significantly" that requires consideration of the context of the action – with both short and long-term effects being considered relevant – and the

intensity or severity of the impact. 40 C.F.R. § 1508.27.

The Commission has concluded that an Applicant's obligation to include any new and significant information in its *Environmental Report* extends to that information even when it pertains to a Category 1 issue. See *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), 02-14, 55 N.R.C. 278, 290 (2002). As Contention 28 demonstrates, the *Environmental Report* fails to adequately address the groundwater contamination issue at Indian Point.

Staff claims that Contention 28 challenges the Generic EIS and the Commission's determination that the radiological impacts on the environment during the period of license renewal can be addressed on a generic basis, and that the impacts are small. Staff Response at 79. In support of this, Staff references a contention raised by a petitioner in *Turkey Point*, which the Board found inadmissible. Staff Response at 80 (citing *Turkey Point*, LBP-01-6, 53 N.R.C. at 154-55). However, contrary to Staff's suggestion, Contention 28 does *not* assert that leaks from the spent fuel pools are new information regarding a Category 1 issue. In fact, in its Petition, New York State states that the leaks do "not fit neatly into the NRC's Category 1 or Category 2 issues." New York State Petition at 247. These leaks and their impacts are neither a Category 1 nor a Category 2 issue; they are a new type of environmental impact that is not addressed in the Generic EIS.

Limiting the required NEPA review of Indian Point's license renewal to only Category 1 and Category 2 issues would not allow previously unanalyzed impacts to be addressed. NEPA

“places upon an agency the obligation to consider every significant aspect of the environmental impact of a proposed action.” *Baltimore Gas & Elec. Co. v. Natural Res. Def. Council, Inc.*, 462 U.S. 87, 97 (1983). The Staff’s position would violate the NEPA requirement for all federal agencies, including the NRC, to take a “hard look” at the environmental impacts of proposed actions.

Since Contention 28 does not challenge the generic findings of the Generic EIS, but raises a new environmental impact not previously considered by the NRC, it is therefore within the scope of this proceeding, satisfying 10 C.F.R. § 2.309(f)(1)(iii).

Entergy argues that because the IP1 spent fuel pool is not included in the scope of IP2 and IP3 license renewal, and because the IP1 spent fuel pool is supposed to be drained in 2008, the IP1 spent fuel pool leak is beyond the scope of the license renewal proceeding. Entergy Answer at 162. The facts do not support this argument. Continuing operation of IP2 and IP3 prevents the decommissioning of IP1 until all three reactors are permanently shut down. As Entergy’s *Hydrogeologic Report* clearly indicates, the contamination plume from the IP1 spent fuel pool affects much more than IP1. *See Hydrogeologic Site Investigation Report, Indian Point Energy Center, Buchanan, New York* (Jan. 11, 2008) at Figures 6.15, 8.2 and 9.4 (hereinafter “*Hydrogeologic Report*”). The plumes from IP1 and IP2 also overlap as they make their way toward the Hudson River. *See id.* at Figures 6.15, 8.1, 8.2, 9.3, and 9.4. Thus, the analysis in the *Environmental Report* must address the impacts of the IP1 plume and the impacts of the IP2 plume. NEPA requires the combined environmental impacts of the leaks from both the IP1 and

IP2 spent fuel pools be assessed. These cumulative impacts must also be addressed by the NRC in the Supplemental EIS. Similarly, consideration of the no action alternative must include the benefits of stopping further groundwater contamination because these pools will no longer be used. Therefore, the IP1 spent fuel pool leaks clearly fall within the scope of this license renewal.

B. Contention 28 provides adequate factual and expert support.

Staff claims that New York State's expert raises no issues of fact and that nothing in the Declaration of Tim Rice controverts information in Entergy's application regarding the leaks at Indian Point's spent fuel pools. Staff Response at 80. In Contention 28, New York State provides supporting data showing that concentrations of tritium from the IP2 spent fuel pool leak were detected at levels as high as 30 times the drinking water standard and that concentrations of strontium-90 from the IP1 spent fuel pool leak have been detected at almost 14 times the drinking water standard. Rice Declaration ¶¶ 16, 19. Moreover, concentrations of strontium-90 have been detected at approximately 3.4 times the drinking water standard at a monitoring well closest to the Hudson River. *Id.* ¶19. In contrast, the *Environmental Report* states that Strontium-90 has been detected in "low concentrations" in some onsite groundwater monitoring well samples. *Environmental Report* at 5-4. This data cited in Contention 28 provides adequate factual support that high levels of radionuclides are present in the groundwater at Indian Point due to the leaks from the IP1 and IP2 spent fuel pools, and that New York State disagrees with both the Staff and Entergy as to the impacts of those leaks.

Entergy alleges that New York State has not provided any data to dispute Entergy's statement that "EPA drinking water limits are not applicable" to site area groundwater. Entergy Answer at 156-57 (citing *Environmental Report* at 5-6). Entergy also claims that because no drinking water is currently being impacted, the EPA drinking water limits are not applicable and, therefore, there is no basis for the claim that Entergy failed to adequately assess the significance of groundwater contamination at the site. Entergy Answer at 157. Entergy is wrong in its current attempt to ignore the EPA standards.

First, Entergy references EPA standards in the *Environmental Report* in the discussion on NRC's evaluation of impairment of groundwater quality in Section 4.8.2 of the Generic EIS. See *Environmental Report* at 5-3 and 5-4. The *Hydrogeologic Report* also uses EPA drinking water limits to determine the level of radionuclides in the tritium and strontium plumes because they provide a recognized benchmark for comparison purposes, despite the fact that there are currently no drinking water wells on the site. See *Hydrogeologic Report* at 90, n. 64 (referencing Figure 8.1); *Id.* at 101, n. 86 (referencing Figure 8.2). Thus, the use of these standards is certainly applicable to an assessment of the significance of the leaks at Indian Point.

Second, the high concentration of radionuclides in the groundwater cannot be discounted just because the water is not currently being used as drinking water. As a matter of law, Entergy does not have the right to decide the current and future uses of groundwater for the residents of New York State. See Environmental Conservation Law ("ECL.") §§ 17-0101; 17-0301; 17-0303; 17-0809; 6 N.Y.C.R.R. Parts 701, 703. Moreover, this is in direct conflict with the NEPA

requirement that such significant groundwater impacts must be assessed before a project is approved according to NEPA and CEQ regulations and not just according to NRC regulations relating to drinking water impacts. See 42 U.S.C. § 4332(C); 40 C.F.R. § 1508.27; 40 C.F.R. §1502.1. Thus, Entergy fails to adequately support its conclusion that the impacts of the spent fuel leaks are not significant.

The facts presented by New York State demonstrate that high levels of radionuclides are found in the monitoring well close to the Hudson River and in the site groundwater, which flows toward the Hudson River. See Rice Declaration ¶¶ 16, 19. As a result, New York State has provided adequate factual and expert support in Contention 28, in accordance with 10 C.F.R. § 2.309(f)(1)(v).

C. Contention 28 raises a genuine dispute as to a material issue of law or fact

Entergy also fails to establish that New York State has failed to raise a genuine dispute as to a material issue of law or fact. One issue in dispute is the adequacy of Entergy's *Environmental Report* in assessing the impacts of the spent fuel pool leaks at Indian Point. In the *Environmental Report*, Entergy seeks to connect its assessment of the impacts of the spent fuel pool leaks to Section 4.8.2 of the Generic EIS, wherein the NRC evaluated the impairment of groundwater quality, including impacts due to tritium. Entergy Answer at 158. However, Section 4.8.2 discusses impairment of groundwater quality at facilities that withdraw groundwater for any purpose, such as operational dewatering. Moreover, a single paragraph discussing the levels of tritium contamination at the Prairie Island station in this section of the

Generic EIS can hardly be considered as a complete assessment of the impacts of the type of leaks identified at Indian Point, such as leaking radionuclides from spent fuel pools.

Additionally, the NRC's regulations require that an Environmental Report include an applicant's status of compliance. 10 C.F.R. § 51.71(c). As stated in New York State's Petition, Entergy is most certainly *not* authorized to allow radionuclides to leak into groundwater or into the Hudson River. New York State Petition at 247. Entergy fails to address this compliance issue in its *Environmental Report*.

Another fact in dispute is Entergy's claim that the impacts of the spent fuel leaks are not significant for purposes of NEPA review. Entergy Answer at 158 (citing *Environmental Report* at 5-6). Entergy explains in its *Environmental Report* and its Answer that it relies on the CEQ definition of "significantly" for its analysis. However, Entergy misapplies the CEQ definition of "significantly" in its analysis. Entergy Answer at 155 (citing *Environmental Report* at 5-1); Entergy Answer at 158 (citing *Environmental Report* at 5-6); *Environmental Report* at 5-1. The CEQ regulations state that both context and intensity requires consideration. 40 C.F.R. § 1508.27. In considering context, "in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant." 40 C.F.R. § 1508.27(a). In considering the issue of intensity, the severity of the impact must be analyzed, using ten factors. 40 C.F.R. § 1508.27(b)(1)-(10).⁴⁸

⁴⁸ The ten factors that must be considered in evaluating the intensity of the impact are:

1. Impacts that may be both beneficial and adverse. A significant effect may

An application of these two CEQ requirements of context and intensity here demonstrates

exist even if the Federal agency believes that on balance the effect will be beneficial.

2. The degree to which the proposed action affects public health or safety.
3. Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.
4. The degree to which the effects on the quality of the human environment are likely to be highly controversial.
5. The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.
6. The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.
7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.
8. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.
9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.
10. Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

that the leaks are indeed significant and Entergy must therefore assess them in the *Environmental Report*. As to context, Entergy has failed to adequately assess the long-term effects of the spent fuel pool leaks. Entergy's assertions that groundwater contamination from the IP1 and IP2 spent fuel pools is not significant and that the impacts are small are only based on the *short-term* lack of drinking water impacts and public health risks. This action involves a twenty-year license extension, and neither the *Environmental Report* nor the *Hydrogeologic Report* adequately accounts for future, long-term impacts.

Additionally, in analyzing intensity, CEQ regulations require cumulative impacts to be evaluated. 40 C.F.R. § 1508.27(b)(7). Cumulative impact is defined as:

the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time.

40 C.F.R. § 1508.7. Entergy fails to assess whether the impacts of these spent fuel pool leaks would add to the cumulative impact of twenty more years of plant operation. These impacts must be assessed by Entergy and the NRC prior to license renewal. As mentioned above, the long-term effects of the contaminated groundwater plumes emanating from IP1 and IP2 have not been adequately analyzed in the *Environmental Report* or in the *Hydrogeologic Report*.

Therefore, the NRC must address this omission in the *Environmental Report* and fully analyze the impacts of radionuclides leaking from the spent fuel pools at Indian Point, and mitigation measures to address these leaks. This study must include the long-term view

mandated by NEPA. As New York State argues in its Petition, the current investigation of the spent fuel pool leaks does not constitute or even contemplate the twenty-year long-term view that NEPA mandates the NRC to perform for this proposed action. New York Petition at 247-48. Clearly, Entergy's *Environmental Report* and the *Hydrogeologic Report* can not be used by the NRC to meet NEPA requirements as they apply to license renewal. 10 C.F.R. § 51.10. As stated in the Declaration of Tim Rice:

Even if Entergy's attempts to stop future leaks at IP1 and IP2 are completely successful, this cumulative historical contamination in the structures themselves and in the underlying soil, fill, and bedrock will act as a reservoir that will continue to release contaminants into the groundwater for the foreseeable future.

Rice Declaration at ¶ 27. This groundwater contamination will effectively preclude the groundwater from being used as a source of drinking water following the eventual closure of the site. New York State clearly disputes any implication that the impacts of these leaks, which forecloses the future use of a resource, are somehow short-term and not significant for purposes of NEPA review.

In conclusion, Contention 28 is supported by adequate factual information to show that a genuine dispute exists between the new York State and Entergy on an issue of material fact or law, in compliance with 10 C.F.R. § 2.309(f)(1)(vi). This Contention is based on New York State's dispute of the adequacy of the information in Entergy's *Environmental Report* and in the *Hydrogeologic Report* in providing the comprehensive, coordinated, long-term inquiry that NEPA requires the NRC to undertake in a license renewal proceeding. The issue is material to

the findings the NRC must make regarding the environmental impacts of the continued operation of Indian Point for another twenty years. Thus, Contention 28 should be admitted in its entirety.

CONTENTION 29

Contention 29 demonstrates that the evacuation plan for Indian Point is ineffective and that the *Environmental Report* fails to analyze the plan in its evaluation of the effects of a severe off-site radiological release accident and the necessary mitigation measures to reduce those effects as required by National Environmental Policy Act (“NEPA”). The Staff and Entergy do not refute the numerous and well-known deficiencies with the evacuation plan identified by the State of New York. New York State has put forth sufficient facts and evidence regarding the failures and deficiencies of the *Environmental Report* for Indian Point on the evacuation planning issue. Thus, the State of New York has met the requirements of 10 C.F.R. § 2.309, and Contention 29 must be admitted into this license renewal proceeding.

The Staff argues that “emergency preparedness is not an appropriate subject for consideration in a license renewal proceeding, as this matter is addressed on an ongoing basis with respect to a facility’s existing operating license under 10 C.F.R. Part 50.” Staff Response at 82. Entergy argues that “[n]o finding under [§ 50.47] is necessary for issuance of a renewed nuclear power reactor operating license.” Entergy Answer at 165-66. Whether that is a correct analysis of the impact of that regulation, which it is not, is irrelevant because Contention 29 is clearly not a safety contention, but an environmental one. The Contention only challenges the failure of the *Environmental Report* and its non-compliance with NEPA. New York State

Petition, Contention 29 at 253. New York State identifies the safety regulations and Indian Point's inability to comply with those requirements in order to underscore the substantial adverse impacts that should be considered in the *Environmental Report* analysis.

The issue underlying Contention 29 is whether, as it is required, the Indian Point *Environmental Report* fully analyzes and identifies mitigation measures should there be an off-site radiological emergency release. New York State Petition, Contention 29 at 262. The Staff Response and Entergy's Answer divert attention from the requirements and obligations of the *Environmental Report* to analyze and evaluate severe accident mitigation measures (the evacuation plan) and its real world response to a corresponding radiological release from the facility. Instead, Staff and Entergy attempt to repackage Contention 29 and focus it on what they call a "safety" review. Evacuation planning, however, is a NEPA environmental issue. New York State Petition at 29-30, Contention 29 at 256, New York State Executive Agencies and the Department of Law Scoping Comments on the License Renewal of Indian Point Units 2 and 3, Buchanan, New York, October 31, 2007 at 4-5, ADAMS ML073090588.

The Staff argument states that "Through its standards and required exercises, the Commission ensures that existing plans are adequate throughout the life of any plant even in the face of changing demographics and other site-related factors . . . The issue concerning the potential inadequacy of the existing plans, exercises, or evaluation time estimates to account for such changes does not involve matters limited to the renewal of operating licenses." Staff Response at 82-83, citing 1991 Statement of Consideration, 56 Fed. Reg. at 64,967. Entergy

claims that “Petitioner fails to understand that emergency plans are periodically reviewed in order to ensure that they are adequate as part of the ongoing regulatory process.” Entergy Answer at 167. Contention 29 presents unrefuted and detailed evidence and a declaration challenging the adequacy of the evacuation plan and its inability to mitigate impacts in the event of a severe off-site radiological release from Indian Point.

The conclusions of the comprehensive 2003 Witt Associates Report and its recent update submitted in the form of the Declaration of Raymond C. Williams in support of New York State’s Petition, clearly establish the numerous and detailed flaws of the current evacuation plan. In fact, the Williams Declaration discusses key mitigation measures needed to improve emergency planning at Indian Point. Williams Declaration ¶¶ 15, 16, 24, 25, 31, *see also* 2003 Witt Associates Report, ADAMS ML062970228.

In addition to these detailed assertions in evidence and independent review, the professional judgment of State and local governments is also before the Board because these government bodies responsible for actually implementing the evacuation plan for Indian Point have refused to *certify* the emergency plan to the federal government. Three of the four counties immediately surrounding Indian Point have agreed on this point since 2003. *See* New York State Petition, Contention 29 at 268–70, Williams Declaration ¶¶ 19, 20. In fact, on November 29, 2007, Westchester County, the host county to the Indian Point facility, decided it would no longer participate in State and federal drills of the Indian Point evacuation plan, stating that “until the Nuclear Regulatory Commission or FEMA, or both, compel Entergy to commit the attention,

personnel, technology and funding necessary to ensure offsite emergency preparedness . . . [I]t was demonstrated that Entergy was not serious about its participation. Entergy's staffers assigned to the practice drill were unprepared to participate, unfamiliar with the process and uninformed about the drill scenario." Letter from Andrew Spano, County Executive, Westchester County to Chairman Dale E. Klein, US NRC (Nov. 27, 2007), EDATS#: SECY-2007-0561. These actions by local officials clearly establish that severe accident risks are not mitigated by the evacuation plan.

Staff argue that "the GEIS specifically considers the environmental impacts of postulated accidents, and treat this as a Category 1 issue such that it need not be addressed in a site-specific ER . . . Thus, this issue has been resolved by the Commission's regulations adopting the GEIS and is not appropriate for further consideration in this license renewal proceeding." Staff Response at 83-84. The law, however, requires that alternatives to mitigate severe accidents be considered for all plants that have not considered such alternatives. See 10 C.F.R. § 51.53(c)(3)(ii)(L). 10 C.F.R. Part 51, Appendix B, Table B-1; *Robertson v. Methow Valley Citizens Counsel*, 490 U.S. 332, 335 (1989).

Despite this legal requirement to consider alternatives to mitigate severe accidents, the *Environmental Report* fails to consider any of the problems identified with the current emergency planning or ways to fix those problems in order to mitigate the consequences of a severe accident at Indian Point. As the Petition notes, the "evacuation plan is an important component of the mitigation of the significant adverse environmental impacts" of a severe accident. New York

State Petition, Contention 29 at 254. Yet the SAMA analysis in the *Environmental Report* does not include an analysis of the evacuation plan in its “estimation of the risk reductions attributable to implementation of potential SAMA candidates.” *Environmental Report* § 4.21.5.1 cited in the New York State Petition, Contention 29 at 255, 256–59.

New York State has detailed the significant deficiencies of the *Environmental Report* and the Generic EIS presented and relied upon by Entergy. Despite this, Entergy argues that “the Petitioner does not assert any actual deficiencies in the Applicant’s ER.” Entergy Answer at 167. The failure to address the severity of an off-site radiological release and the site-specific conditions and the mitigation measures that must be taken to address such a scenario *are the deficiencies of the Environmental Report*, and they must not be ignored by the Board. New York State Petition, Contention 29. The Petition, in particular the Declaration of Raymond C. Williams, Declarations Vol. II, discusses several mitigation measures that could be implemented to improve the emergency planning effectiveness, several of which are within the power of Entergy to help implement. Williams Declaration at ¶¶ 15-25. These mitigation measures include, for example:

- region-wide process to engage stakeholders in developing emergency planning guidelines and performance outcomes;
- improved sirens and their full implementation;
- improved school evacuation procedures; and
- if the barriers to attaining dose savings through effective evacuation are greater at Indian Point [which they are], then the evacuation plans and actions taken need to be more effective and fully reflective of the unique

challenges posed by Indian Point.

Williams Declaration at ¶¶ 15, 17, 18, 24.

Entergy asserts that the findings of the 2003 Witt Associates Report and the Williams Declaration do not raise material issues and are not an adequate basis for New York State's contention. Such an assertion is specious at best, and patently ignores the numerous mitigation measures identified by New York that must be addressed in a NEPA review. The *Environmental Report*, in its generic discussion of evacuation planning, fails to consider any of these carefully developed and authoritative suggestions for mitigating severe accident consequences for Indian Point set forth by New York State. It is clear from the Generic EIS that modifications to emergency planning procedures are intended to be considered as potential mitigation measures, at least where, as here, substantial deficiencies in the current emergency planning are well-documented and undisputed.

Entergy also relies upon selective portions of *Turkey Point* for the assertion that the environmental impacts and mitigation measures for evacuation planning issues should not be part of the license renewal process. Entergy Answer at 167-68. A closer reading of the case, however, demonstrates that there is considerably more in this Commission decision on point with this case that Entergy excludes from its analysis. *In the Matter of Florida Power & Light Company*, CLI -01-17, 54 N.R.C. 3 (July 19, 2001) (“*Turkey Point*”). Emergency planning for severe accidents is an environmental review issue, and *Turkey Point* clearly recognizes that it is not a question merely relegated to a “NRC safety review at the license renewal stage,” as Entergy

claims. New York State Petition, Contention 29; *Turkey Point*, 54 N.R.C. at 8; see Entergy Answer at 166. The Commission stated that even where the GEIS has found that a particular impact applies generically (Category 1), the applicant must still provide additional analysis in its Environmental Report if new and significant information may bear on the applicability of the Category 1 finding at its particular plant.” *Turkey Point*, 54 N.R.C. at 11. The Commission further stated that it “recognizes that even generic findings sometimes need revisiting in particular contexts.” *Turkey Point*, 54 N.R.C. at 8. As the Commission noted in *Turkey Point*:

apart from individual license renewal proceedings, the Commission itself will review (and revise as needed) the license renewal rules and GEIS environmental analyses every 10 years, beginning approximately 7 years after completion of the last review.

Turkey Point, 54 N.R.C. at 12, citing 61 Fed. Reg. at 28,468. In the comments that it submitted in the NEPA scoping process, the New York State specifically pointed out that such a NRC review of the Generic EIS has not occurred for many years, as its own regulations require, nor has it occurred for Indian Point. *New York State Executive Agencies and the Department of Law Scoping Comments on the License Renewal of Indian Point Units 2 and 3, Buchanan, New York*, October 31, 2007 at 4–5, ADAMS ML073090588. The twelve-year-old findings of the Generic EIS and the Commission’s opinion in *Turkey Point* further underscore the need for the mitigation measures identified by New York to be addressed and analyzed as required by NEPA as part of the *Environmental Report* for this license renewal proceeding.

In conclusion, Contention 29 is supported by adequate factual information and evidence to establish that a genuine dispute exists between New York State and Entergy on an issue of material fact or law meeting the requirements of 10 C.F.R. § 2.309(f)(1)(vi). New York State has evaluated the emergency evacuation plan for the communities surrounding Indian Point and asserts that the law requires nuclear generating facilities, as part of the environmental review of a license renewal, to analyze and assess mitigation measures to address severe off-site radiological releases. Entergy has not done so, even though they and Staff do not refute or contradict the underlying factual information of New York State on the failures of the emergency preparedness plan for Indian Point. These failings are well known and have been raised in both New York State's NEPA scoping comments on the Supplemental EIS and now in Contention 29. The analysis and mitigation of the impacts of an off-site radiological release are too significant and important and must be addressed; they are also material to a NRC license renewal determination. Because the *Environmental Report* does not analyze or evaluate these environmental impacts and their mitigation measures as required by law, Contention 29 should be admitted by the Board in its entirety.

CONTENTION 30

Contention 30 demonstrates that Entergy's use of the outmoded once-through cooling water intake system at IP2 and IP3 causes significant heat shock/thermal discharge impacts. The cooler Hudson River water is drawn into the plant, is then run through the plant to cool down the plant operations, becomes heated, and is then discharged back into the Hudson River, at a higher

temperature. This process adversely affects aquatic life by changing the temperature of the water, both by the increased temperature surrounding the nuclear plant and when the plant suddenly ceases to operate for either scheduled or unscheduled outages. Here, the *Environmental Report* fails to adequately analyze these impacts, including mitigation measures needed to address them, as required by the National Environmental Policy Act ("NEPA").

The Staff does not oppose this contention to the extent that it challenges the adequacy of Entergy's analysis of thermal impacts in the *Environmental Report*. Staff Response at 85. The Staff agrees that New York State has met all of NRC's criteria for an admissible contention set forth in 10 C.F.R. § 2.309 (a)-(f). *Id.* Heat shock/thermal impacts are a Category 2 issue that Entergy is required to analyze. 10 C.F.R. § 51.53(c)(3)(ii). The Staff, however, disagrees with New York State's view of the logical and necessary next step presented in the Contention, *i.e.*, that the NRC should condition the twenty-year license renewal on Entergy's construction of closed-cycle cooling systems to mitigate the adverse impacts of the current once-through cooling system. However, if the Staff is correct, then the only option open to the Board, when it finds that the environmental impacts are as substantial as identified in the relevant evidence, is denial of the license because the benefit of leaving an option open to generate power that will cause damage to the environment does not offset the environmental damage, particularly when compared to the other options, discussed in Contentions 9 and 10, that will provide the same benefits without the costs.

The regulatory history of Indian Point clearly demonstrates that closed cycle cooling has been considered a necessity since the original licensing of the nuclear facility and that NRC has asserted that it has authority to require closed-cycle cooling at Indian Point. The Staff position on closed-cycle cooling systems is belied by this licensing history. The AEC originally licensed IP2 and IP3 on September 25, 1973, and December 12, 1976, respectively. Little Declaration at ¶ 4. The NRC amended the IP2 license in September 1973, mandating that the operator install a closed-cycle cooling system after May 1, 1978. Little Declaration at ¶ 5. The September 1973 NRC amendment also required that the operator evaluate the economic and environmental impacts of alternatives to a closed-cycle cooling system, as well as develop an interim plan to minimize the effects from the thermal discharges, and from impingement and entrainment impacts. *Id.*, see also Reply in Support of Contention 31, *infra*.

Similarly, in April 1976, the NRC amended the license for IP3, also mandating that the operator install a closed-cycle cooling system. Little Declaration at ¶¶ 6, 7. The NRC also imposed special interim conditions for biota protection and allowed for a change in the schedule to enable the plant operator to secure any necessary governmental approvals for construction of closed-cycle cooling systems. *Id.* As part of the amendment, the NRC required that any extension of the schedule had to be accompanied by a showing of good cause and a demonstration that the Hudson River aquatic biota would continue to be protected from any significant adverse impacts as a result of continued operations at IP3. *Id.*

At approximately the same time, the EPA was in the process of issuing NPDES permits that would have also required the installation of closed-cycle cooling systems for Indian Point. *Id.* at ¶¶ 8, 9. The affected generators, including Entergy's predecessors, sought an administrative hearing on EPA's proposed NPDES permits. *Id.* at ¶¶ 13, 14. The parties reached a settlement in 1981 for a term of ten years, which was referred to as the Hudson River Settlement Agreement ("HRSA"). *Id.* The HRSA was intended to provide extensive data to catalogue the environmental impacts of once-through cooling from a number of power plants along the Hudson River, including Indian Point Units 2 and 3. *Id.* at ¶ 5.

The Staff and Entergy cite to *Vermont Yankee* regarding the legal responsibility for Clean Water Act water quality determinations. Staff Response at 85, citing *Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), 65 N.R.C. 371, 388 (2007). Entergy relies on *Vermont Yankee* for the proposition that because it has a State Administrative Procedures Act ("SAPA") extended SPDES permit, it does not have to perform in its *Environmental Report*, an analysis of environmental impacts and mitigation measures for impingement, entrainment, and thermal impacts from its use of once-through cooling at Indian Point. *Vermont Yankee*, however, is clearly distinguishable from the facts and circumstances of the license renewal application for Indian Point and does not control the outcome here.

In *Vermont Yankee*, a state water pollution permit was issued that allowed increased temperature discharges into the receiving waters for the nuclear plant. Arguably, this permit was

less stringent than its predecessor. Most important is that this newly issued permit was the result of a full water pollution permit review by the State and was duly issued under its delegated Clean Water Act program. For Indian Point, there has been no such current, duly issued permit that fully accounts for the real-world environmental impacts from Indian Point. The current SPDES permit process has been experienced numerous delays, not the least of which involves two Draft EISs submitted to DEC by facility operators, and rejected by DEC on the merits. In fact, Entergy's and its predecessors' failure to address the substantive issues raised by New York State during the State administrative process resulted in the New York State taking an extremely unusual step in preparing the Final EIS for the permit renewals on its own.

The fact is that the draft SPDES permit that New York State issued in 2003 represents a major departure from the twenty-year-old SAPA-extended permit that Entergy now asserts it can rely upon to avoid its legal obligation under NEPA to analyze impacts from its once-through cooling systems. Nor does the twenty-year-old SAPA-extended SPDES permit for Indian Point satisfy Clean Water Act §§ 316(a) and 316(b). DEC's SPDES permit renewal process for Indian Point is ongoing. In that administrative context, a SPDES permit that complies with the Clean Water Act has not been issued. To protect the applicant's due process rights, the old permit is administratively extended to allow operation while the administrative process moves forward to its necessary and final conclusion.

The substantive changes from the SAPA-extended permit to the 2003 Indian Point draft SPDES permit clearly demonstrate the inadequacy of the SAPA-extended permit and the need

for the process to be completed. In *Vermont Yankee*, that process for the permit was completed, the review was conducted, and the permit was issued. The facts of *Vermont Yankee* do not exist for Indian Point where clearly identified Clean Water Act issues have not been resolved and a duly issued SPDES permit that accounts for all environmental impacts has not been issued. Just as the NRC rejected Entergy's attempts to rely on an outdated permit in *Vermont Yankee*, so, too should it reject Entergy's maneuvering in this proceeding. Thus, the environmental analysis of thermal impacts must be included in the *Environmental Report*.

Entergy's other arguments against analysis of the environmental impacts of once-through cooling are novel, unique, and in places incorrect and unsupportable. For example, Entergy suggests that New York State should commence an enforcement action if the environmental impacts are as New York State represents them to be. Entergy Answer at 171. New York State's unquestionable prosecutorial discretion, however, is irrelevant to the NEPA obligations for the *Environmental Report*. Moreover, Entergy has benefitted from the State's insistence that the administrative and SPDES process be followed under the auspices of the HRSA. Little Declaration ¶ 14.

Entergy also incorrectly claims that "[a]lthough the HRSA expired in 1991, its substantive conditions (except with respect to the IPEC outage requirements) were continued in *seriatim* judicially approved consent orders the last of which governs today, pending the issuance of a renewed SPDES permit by NYSDEC." Entergy Answer at 172. Entergy's argument is without merit because the terms of the Fourth Amended Consent Order provide that it would

continue until February 1, 1998, or until a SPDES permit renewal is issued, whichever first occurred. *NRDC v. NYSDEC, Con Ed, Inc., NYPA, Inc., Orange and Rockland Utilities, Inc., and Central Hudson Gas and Electric Corp.*, Fourth Amended Stipulation of Settlement and Judicial Consent Order, ¶ 2 (Little Declaration, Exhibit H). The SPDES permit has not been renewed and so by its terms, the Consent Order expired on February 1, 1998. No further written agreement has extended its provisions. Little Declaration at ¶ 23.

Entergy also disingenuously relies upon the Draft EISs to demonstrate that the thermal impacts are minimal. These Draft EISs were rejected by DEC because they failed to account for the true impacts. Little Declaration ¶¶ 25-28. The State-prepared Final EIS controls as is clear from the document itself. Little Declaration ¶ 30. Thus, as a matter of law, to the extent that the FEIS contradicts the DEIS, the FEIS controls.⁴⁹

Moreover, New York State's Petition and the Declaration of Dr. David Dilks clearly articulates the many deficiencies and omissions of the environmental analysis in Environmental Report, despite Entergy's claim to the contrary. Dr. Dilks makes clear that the *Environmental Report* "does not adequately, or even accurately, address the impacts from the thermal discharges

⁴⁹ Hudson River FEIS, p. 60 ("Therefore, the Department has determined to not rely on these models to make conclusions for this FEIS or for the SPDES permits to be issued for each of the three HRSA power plants."); Hudson River FEIS, p. 71 ("Thermal discharges were inadequately addressed in the DEIS. The DEIS asserts, with no supporting evidence, that '... [t]he surface water orientation of the plume allows a zone of passage in the lower portions of the water column, the preferred habitat of the indigenous species.' Other data and analyses cast doubt on this assertion."); Hudson River FEIS, p. 51 ("Although the DEIS asserts that the generating facilities have caused no harm to the aquatic community, numerous findings suggest otherwise."), Hudson River FEIS, p. 52 ("These "once-through cooling" power plants do not selectively harvest individual species. Rather, impingement and entrainment and warming of the water impact the entire community of organisms that inhabit the water column.").

at IP2 and IP3.” Dilks Declaration ¶ 17. Dr. Dilks categorically states that the *Environmental Report* “does not adequately consider the temperature impacts on the bottom waters that occur outside of the plume.” *Id.* Dr. Dilks further discusses the omissions and deficiencies of the Entergy analysis on this, which is based upon the rejected Entergy Draft EIS, including that it (1) overstates the accuracy of model predictions, (2) violates the underlying assumptions of the CORMIX model, (3) overstates the degree of protectiveness in the model, and (4) underestimates background temperatures in the Hudson River. *Id.* ¶¶ 23, 24, 25, 26, 29, 30, 36. Thus, Entergy is incorrect in claiming that New York State ““identifies no failure of the [Environmental Report] to contain information.””

Entergy asserts that because New York State’s expert, David Dilks, acknowledges that the thermal modeling from the late 1990s is not viable, New York State cannot claim any adverse impacts from flawed modeling. Entergy Answer at 185. Although Dr. Dilks does question Entergy’s modeling, any inaccuracy in the modeling Dr. Dilks identifies would result in *greater* thermal impacts than concluded by Entergy. Dilks Declaration at ¶ 21. Entergy also claims that the conditions in the modeling, as required by DEC, were not realistic and were not representative of the Hudson River. Entergy Answer at 187. Again, Dr. Dilks’s concerns about the modeling do not question the existence of impacts from thermal discharge, but instead indicate that the impacts may be much greater than the modeling predicted. Dilks Declaration at ¶ 21. Additionally, Dr. Dilks notes that the temperatures may have increased since the time of the DEIS analysis, and thus, the maximum temperatures in the Hudson River could be greater

than predicted in the DEIS. *Id.* at ¶ 30. Most telling, though, is Dr. Dilks's statement that now there are better modeling tools available, *i.e.*, three-dimensional far field models and remote sensing. *Id.* at ¶ 31.

Entergy also asserts that Dr. Dilks's declaration is speculative and inadmissible, despite that he methodically exposes flaws in Entergy's biological analysis and in its modeling. Entergy Answer at 186, Dilks Declaration at ¶¶ 21-31, 35-39. Entergy claims that New York State simply recites general thermal principles and fails to make a real connection to operations at IP2 and IP3 and associated impacts on fish. Entergy Answer at 188, 190. Because of the numerous flaws in Entergy's biological assessment, Dr. Dilks demonstrated the connection conservatively. More recent data is needed, since the DEIS used background temperatures of the Hudson River from 1951 through 1992. Dilks Declaration ¶ 36. Entergy, of course, has the burden to provide this data. And, when more recent temperatures are considered, including those for critical periods, the biological impacts would likely be *greater* than estimated. *Id.*

In conclusion, New York State has demonstrated that Contention 30 contains adequate factual and expert support. The historical record demonstrates that closed-cycle cooling systems for IP2 and IP3 were required by NRC and EPA and were considered an appropriate mitigation measure for the environmental injuries perpetrated by once-through cooling. Thus, NRC has left little doubt that such measures must be considered for Indian Point. Moreover, the Staff does not oppose the admission of this contention "to the limited extent that it challenges the adequacy of the heat shock analysis provided in the [Environmental Report]." Staff Response at 85. As

demonstrated by the FEIS in New York State's SPDES permit renewal proceeding for Indian Point, the environmental impacts and mitigation measures must be considered for the thermal impacts on the Hudson River caused by operation of Indian Point. As in the ongoing SPDES process, the NRC is obligated to require this analysis, and Entergy's *Environmental Report* fails to address it.

Entergy's reliance on a SAPA extended permit and its inadequate and rejected conclusions in its Draft EISs for the SPDES permit renewal similarly cannot shield it from its legal obligations under NEPA. The DEC 2003 draft SPDES permit and the Final EIS that was compiled as part of that process further and clearly demonstrate the detailed analysis of thermal impacts to be required in the *Environmental Report*. Entergy cannot rewrite this Federal and State regulatory history of the SPDES permit for Indian Point, and must not be allowed to omit the necessary NEPA environmental analysis on the thermal impacts in this license renewal proceeding. Thus, New York State agrees with the NRC staff on the admissibility of Contention 30, and asserts that the entire contention must be admitted in this proceeding.

CONTENTION 31

Contention 31 demonstrates that Entergy's use of the outmoded once-through cooling water intake system at IP2 and IP3 causes significant adverse environmental impacts of impingement and entrainment, which Entergy is required to analyze in its Environmental Report and which the NRC is required to review under NEPA. The operation of the Indian Point water intakes traps fish, impinging and suffocating them. The aquatic life that pass through the screens

become entrained. The result of these processes is the same -- the aquatic life and fish become injured and die. The *Environmental Report* fails to adequately analyze the environmental impacts of Indian Point's operation, which causes impingement and entrainment, and the mitigation measures necessary to address these impacts.

The Staff does not oppose this contention to the extent that it challenges the adequacy of Entergy's analysis of the issue in the *Environmental Report*. Staff Response at 87. Thus, the Staff agrees that the State has met all of the NRC criteria for an admissible contention set forth in 10 C.F.R. § 2.309 (a) - (f). New York State agrees with the Staff that Contention 31 -- on the adequacy of the Entergy's analysis of impingement and entrainment impacts in its *Environmental Report* -- is admissible in this proceeding. New York State disagrees, however, that the imposition of closed-cycle cooling systems as a remedy to address these adverse environmental impacts is outside the scope of the NRC license renewal proceeding. Staff Response at 87. As the State demonstrated above, in its Reply on Contention 30, the Staff is bound by the historical record of the licensing of IP2 and IP3 and the law of the case. New York State incorporates by reference that Reply here.

Entergy opposes this contention on a number of grounds: (1) that it is outside the scope of the NRC's license renewal process; (2) that it lacks adequate factual or expert opinion to support it; and (3) that it fails to establish a genuine dispute with the applicant on a material issue of law or fact. The Applicant's arguments are without merit. The issues raised in Contention 31 are within the scope of this re-licensing proceeding and the State has presented adequate expert and

factual support that establishes a genuine dispute with the Applicant on a material issue of law and fact.

Contention 31 is within the scope of this proceeding because NEPA and NRC regulations require the NRC to consider the impacts from once-through cooling in relicensing matters. New York Petition at 282. Entergy, though, repeats the argument that it raises in response to Contention 30, claiming that since it is operating Indian Point Units 2 and 3 pursuant to a SPDES permit issued by DEC, that no adverse impacts can result. Entergy extrapolates this to mean that this issue is outside the scope of this proceeding. As was the case with Contention 30, the Applicant's circular argument and reasoning cannot withstand scrutiny.

Contention 31 properly identifies specific errors, deficiencies and omissions in the *Environmental Report*. As the State's expert noted in the Contention, the *Environmental Report* "does not provide any estimate of the actual numbers of fish impinged at either Indian Point Unit 2 or Indian Point Unit 3. Nowhere in the six pages of analysis regarding impingement are the actual numbers of fish provided. In my view, that is a major omission because it fails to acknowledge a significant and obvious environmental impact of once-through cooling. In addition, I found statements in the Entergy report that were misleading and self-serving." Jacobson Declaration ¶ 18. These are but a few sentences identifying the deficiencies in the *Environmental Report*. See also Jacobson Declaration ¶ 21 (the *Environmental Report* "also does not provide any estimate of the actual numbers of fish entrained at both plants"); Jacobson Declaration ¶ 22 (Ristroph screens "have no benefit for reducing impacts from entrainment").

In the *Environmental Report* and in its Answer, Entergy seeks to reject the long-standing position of the New York State that fish mortality is the measure of the adverse impacts of these nuclear facilities on the Hudson River. Entergy asserts that its view of a “healthy” population of Hudson River fish communities, allegedly existing despite the once-through cooling system at IP2 and IP3, is evidence that there is no adverse impact from once-through cooling systems. Entergy neither recognizes nor takes issue with New York State’s long-standing regulatory prohibition against fish mortalities (including fish, fish eggs, and fish larvae) identified in Mr. Little’s declaration as an aspect of the Hudson River regulatory history dating back to 1991. *See generally*: Little Declaration ¶¶ 21, 22. Here, Entergy is attempting to revise history.

The history of the case is particularly relevant to the fish mortality issue as it relates to the analysis and assessment of the environmental impacts of the operation of Indian Point on entrainment and impingement as required by NEPA. Staff do not oppose the admissibility of New York State’s contention on this issue. Each operator of a Hudson River power plant using once-through cooling water intakes, similar to those used by Indian Point, was expressly advised regarding the DEC policy on adverse impacts to the river. On April 29, 1991, DEC Commissioner Thomas C. Jorling wrote to the operators of these facilities, including IP2 and IP3, and made clear that a population-based theory would not be acceptable in New York State. *Letter from Commissioner Thomas Jorling to Mr. J. Phillip Bayne, President and Chief Operating Officer, New York Power Authority, dated April 29, 1991; Appendix F-V to the FEIS, attached as Exhibit L to New York State’s Petition.* Commissioner Jorling stated, in the context

of entrainment and impingement, that it is “erroneous ... to conclude that utilities should be allocated a fraction of annual mortality goals in fishery management plans.” *Id.* “It is [DEC’s] position that the inadvertant [sic] mortality of fish by utilities is not a legitimate use of fishery resources. Therefore, [DEC] will not allocate a portion of fishing mortality to utilities and will seek elimination if possible, and otherwise minimization, of mortalities caused by utilities.” *Id.* DEC, and the Final EIS for the pending Indian Point SPDES applications, was plain and clear regarding the fish mortality analysis required by the agency.

Furthermore, Entergy’s population argument was rejected by the Second Circuit, which held in *Riverkeeper I* that “EPA’s focus on the number of organisms killed or injured by cooling water intake structures is eminently reasonable.” *Riverkeeper, Inc. v. Environmental Protection Agency*, 358 F.3d 174, 196 (2d Cir. 2004). There, the Second Circuit correctly deferred to EPA’s judgment on how best to define and minimize adverse environmental impacts. *Id.* This same point was upheld in *Riverkeeper II*, where the Second Circuit rejected very similar arguments made by industry petitioners. *Riverkeeper, Inc. v. Environmental Protection Agency*, 475 F.3d 83, 124 (2d Cir. 2007). In *Riverkeeper II*, the Second Circuit again held that the scope of EPA’s regulatory review for impacts from impingement and entrainment is not limited to just the deleterious effects on overall fish and shellfish populations in the eco-system – EPA’s focus on the number of organisms killed or injured was still reasonable and appropriate. *Riverkeeper II*, 475 F.3d at 125, citing, *Riverkeeper I*, at 196.

Despite such a clear position, Entergy's *Environmental Report*, without legal justification, constructs its own retrograde regulatory goal, allowing it to operate IP2 and IP3 in a manner that appropriates fish mortalities. Clearly, New York State's Contention 31 establishes the inadequacy of the analysis of these environmental impacts in the *Environmental Report* for the license renewal.

In its Petition, New York State demonstrates that the *Environmental Report* does not adequately address impingement and entrainment. Specifically, New York State contends that Entergy "did not 'provide any estimate' of entrainment and impingement at IPEC." New York Petition, Contention 31 at 287. Entergy does not refute the State's assertion, but instead cites to what it deems "the ongoing impacts assessment, with its copious quantification of numerous aspects of the relevant fish populations, entrainment and impingement." Entergy Answer at 197. New York State disagrees and has been on record with such a position since 1991.

In furtherance of its decision to ignore the record in this case, Entergy refers in a portion of its *Environmental Report* to fisheries studies performed for a period of time covered by and referenced in the DEIS (1974 through 1997). Entergy Answer at 197, *citing Environmental Report* at 4-19. As New York State has previously explained in this Reply, the Draft EIS referred to by Entergy on the impingement and entrainment issue was twice submitted to DEC and twice rejected as substantively inadequate for the purposes of conducting a thorough and complete environmental impact assessment. Little Declaration at ¶¶ 26, 28, 29. DEC concluded that it was necessary to complete the Final EIS for the SPDES application for Indian Point on its own

because of Entergy's failure to comply with legal requirements of the agency. Little Declaration at ¶¶ 29-30. Therefore, any reliance by Entergy on the Draft EIS and its self-serving population studies must be disregarded and rejected as a matter of law. The Draft EIS does not provide adequate environmental information, and Entergy has been on notice of these underlying analysis issues since 1991.

Entergy also resorts to its cookie cutter assertion: New York State's witness statements are incorrect, speculative, and scientifically indefensible. Entergy attempts to refute the declarations of New York State's experts by proffering their own experts, who allegedly disagree with New York State's assessment of Entergy's *Environmental Report*. There is no merit to Entergy's *pro forma* attack on New York State's expert in Contention 31, which are baseless attacks that attempt to misdirect the substantive arguments in the case, contrary to the evidentiary and historical record. These issues underscore that there is a dispute, it is material, and it is not resolvable at the contention admissibility stage of this proceeding.

The disagreement among experts does not indicate that the statements of New York State's experts are incorrect. Instead, the fact that Entergy claims its experts come to *different* conclusions manifests a genuine dispute. "A contention must show a 'genuine dispute . . . with the applicant on a material issue of law or fact.' See 10 C.F.R. §2.714(b)(2)(iii). To do so, the contention should refer to those portions of the license application (including the environmental report and safety report) that the petitioner disputes and indicate supporting reasons for each

dispute.” *Florida Power and Light* (Turkey Point Nuclear Generating Plant, Units 3 and 4), 54 N.R.C. 3, 14 (2001).

Entergy attacks two of New York State’s experts, Mr. Jacobson and Mr. Little. Entergy Answer at 201. The Declarations accompanying New York State’s Petition clearly demonstrate that each of these experts has sufficient knowledge, skill, experience, training, and education for the testimony they offer on their respective issues. Amongst his numerous qualifications, Mr. Jacobson has been a biologist with DEC since 1993, and most impressively, since 2003, has been a biologist within the Steam Electric Unit of DEC where he has actively engaged in the regulatory program for cooling water intake structures. Jacobson Declaration ¶ 1. In that capacity, Mr. Jacobson was intimately involved with regulatory decisions regarding the impacts of cooling water use at power plants, such as IP2 and IP3, on aquatic organisms. Jacobson Decl. ¶ 1.

Despite Entergy’s protestations, Mr. Little is similarly qualified. The context of Mr. Little’s expertise was clearly summarized in his declaration: “I submit this declaration to provide the history of the NPDES and SPDES permitting of Indian Point and of the significant adverse impacts that arise from the technologically outmoded once-through cooling system that Indian Point uses.” Little Declaration ¶ 2. Mr. Little did not provide conclusions about the cooling system used at IP2 and IP3, as asserted by Entergy. Mr. Little has been the attorney assigned to this case since 1998 (Little Declaration ¶ 1) and has provided the pertinent and critical history of the facility, including the NRC licensing and the NPDES/SPDES permitting. Mr. Jacobson and

Mr. Little are experts regarding impingement and entrainment and the history of the NPDES/SPDES permitting of IP2 and IP3, respectively. Their declarations provide an adequate factual basis for their opinions and Contention 31.

In conclusion, Contention 31 is supported by adequate factual information and evidence to establish that a genuine dispute exists between New York State and Entergy on the issue of impingement and entrainment impacts caused by the operation of Indian Point. The Contention meets the requirements of 10 C.F.R. § 2.309(f)(1)(vi), as exhibited by Staff's not opposing the arguments offered by New York State. New York State asserts that the law requires nuclear generating facilities, as part of the environmental review of a license renewal, to analyze and assess mitigation measures to address the environmental impacts caused by the operation of such facilities, and specifically requires Entergy to analyze and assess mitigation measures to address the impacts of Indian Point to the fish in the Hudson River. Entergy has not analyzed or assessed any such mitigation measures in the *Environmental Report* as they are required to on this critical environmental issue. Staff do not oppose New York State's Contention 31, and it should be admitted into this proceeding in its entirety.

CONTENTION 32

Contention 32 demonstrates that Entergy's use of the outmoded once-through cooling water intake system at Indian Point harms endangered species and candidate threatened species. Entergy's *Environmental Report* fails to adequately analyze environmental impacts to endangered species and does not analyze mitigation measures. The *Environmental Report* must

consider whether continued operation of the once-through cooling water intake system will impact endangered and candidate threatened species, such as shortnose sturgeon and Atlantic sturgeon, respectively, by impinging them on the Ristroph screens and possibly killing them. NEPA and the Endangered Species Act (“ESA”) also requires the NRC to determine whether the twenty-year license renewal is likely to jeopardize listed endangered species in the Hudson River. ESA § 7(a)(2), 16 U.S.C. § 1536(a)(2). In addition to the failure of the *Environmental Report* to include the required analyses, Entergy does not have an incidental take permit for the impingement of the endangered species, and thus, it is violating the law against taking them. ESA § 9(a)(1)(b), 16 U.S.C. § 1538(a)(1)(b).

Endangered species issues are Category 2 issues requiring a plant-specific analysis of environmental impacts and mitigation measures for such impacts under NEPA. *See Table B-1, Summary of Findings on NEPA Issues for License Renewal of Nuclear Power Plants, 10 C.F.R. Part 51, App. B to Subpart A.* Contentions implicating Category 2 issues are ordinarily deemed to be within the scope of license renewal proceedings. *See In the Matter of Florida Power & Light Company* (Turkey Point Nuclear Generating Plant, Units 3 and 4), CLI-01-17, 54 N.R.C. 3, 11-13 (2001).

Staff argue that New York State does not provide evidence to support its claim that Indian Point, by operation of the once-through cooling water intake structures at the facility, is taking an endangered or threatened species in violation of the ESA. *NRC Staff Response at 88.* This is simply not the case. Based on the arguments set forth in Staff’s Response, it is apparent that

Staff failed to look at the documentation the State included in its Petition. As demonstrated below, the evidence presented by the New York State clearly shows that there is ample factual support for Contention 32.

Staff mistakenly believe that the National Marine Fisheries Service (“NMFS”) Endangered Species, Section 7 Consultation Biological Opinion relied upon by Mr. Jacobson in his Declaration does not include data gathered from Indian Point. See Jacobson Declaration at ¶ 27, Exhibit H. The NMFS Biological Opinion addresses ESA issues for shortnose sturgeon regarding the continued operation of the Roseton and Danskammer Point Generating Stations, but it also includes data on the operation of Indian Point. The analysis results (in Table 2) show that the *actual* number of shortnose sturgeon collected during impingement sampling at IP2, from 1972 to 1998, was 21 with 5 additional shortnose sturgeon being taken on non-sample days. During the 1972-1998 sampling period, 10 shortnose sturgeon were collected at IP3, with one additional shortnose sturgeon taken on a non-sample day. As Contention 32 makes clear, the Biological Opinion states that while the levels of impingement at the plants are “relatively small considering the large sampling period and the concentration and spawning areas are not adjacent to the majority of these power plants, *the fact remains that these (and other) power plants on the Hudson River have previously impinged shortnose sturgeon and may have impacted the Hudson River population.*” *Biological Opinion at 22 (emphasis added); see New York State Petition, Contention 32 at 294.*

The same data on shortnose sturgeon is also presented in the Draft EIS (“DEIS”) for the Indian Point SPDES permits. *See* Little Declaration at Exhibit K at Table V-36. Additionally, the Final Hudson River Ecological Study in the Area of Indian Point 1990 Annual Report further supports the data found in the Tables of the Biological Opinion and the 1999 DEIS: that one shortnose sturgeon was impinged during 1990 sampling and was found dead at the time of collection. *See* Jacobson Declaration at Exhibit E. Thus, there is no question, as Mr. Jacobson declares, that shortnose sturgeon have been impinged on the screens at IP2 and IP3.

Correspondence between NMFS and Entergy’s consultant, Enercon Services, further supports Contention 32 regarding Entergy’s ESA violations. Specifically, on January 23, 2007:

NMFS has several concerns regarding the potential for the authorized withdrawals and discharges to affect sturgeon. NMFS’ primary concern is the likelihood of impingement of sturgeon on screens or racks at plant intakes. Information provided in the application by Dynegy for an Endangered Species Act (ESA) Section 10(a)(1)(B) permit for their Roseton and Danskammer plants indicated that from 1972-1998, 37 shortnose sturgeon were impinged at Indian Point Unit 2 and from 1976-1998, 26 shortnose sturgeon were impinged at Indian Point Unit 3. NMFS has no information on likely impingement since 1998; however, we have no information that suggests it no longer occurs. Shortnose sturgeon impinged on intake screens or racks experience high levels of injury and/or mortality. *This information suggests that unauthorized take has occurred in the past at these plants and may continue to occur.*

Jacobson Decl. at Exhibit I (hereinafter “NMFS Jan. 2007 Letter”). The letter further states that “[a]dditionally, NMFS remains concerned about the facility’s current operations (i.e., with once-through cooling). As such, NMFS requests that Entergy provide NMFS with the best available

information on impacts of the facility on sturgeon species.” Jacobson Declaration at Exhibit I at 3; NMFS Jan. 2007 Letter. A subsequent letter in March 2007 states:

Based on the available information, NMFS remains concerned that some level of impingement and/or entrainment of sturgeon may continue to occur at the facility. . . .[S]ection 9 of the ESA defines “take” to mean “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” As such, even if listed sturgeon are returned to the Hudson River following an interaction with the facility’s intakes without being handled by a person, a take has occurred. Any take of a listed species that occurs without special exemption (e.g. an Incidental Take Statement) is illegal pursuant to the prohibitions on take contained in section 9 of the Endangered Species Act (ESA) of 1973, as amended. Therefore, NMFS recommends that Entergy pursue an exemption for the incidental take of listed species that may occur as a result of the continued operation of the Indian Point facility.

Environmental Report, Attachment A at 1 (hereinafter “*NMFS March 2007 Letter*”). Based on this correspondence from NMFS, an unauthorized take occurred at the Indian Point facility in violation of the ESA, and further impingement may continue at the facility.

Staff also argues that New York State has not shown that the License Renewal Application “admits” impingement. Staff quotes Section 2.5 of the *Environmental Report* where NMFS “*estimated* impingement at Indian Point to be approximately . . . 1.6 fish per year for the entire site since the installation of the Ristroph screens . . . in 1990 and 1991.” The estimates that Staff cites come directly from the NMFS Biological Opinion and the estimates are based on the *actual* number of shortnose sturgeon collected during the sampling period and the percent of total

plant flow sampled. Biological Opinion, Appendix A at 65-66. The total estimated impingement of shortnose sturgeon from 1972-1998 at IP2 was 37, and 26 for IP3. *Id.*, Table A-2, at 68-69.

The *Environmental Report* also fails to comply with the NRC's requirement that applicants adequately discuss compliance with all Federal permits and licenses. 10 C.F.R. § 51.45(d). The *Environmental Report* fails to meet these requirements because it (1) does not list an incidental take permit under the Endangered Species Act as one of the permits that must be obtained in connection with the proposed action, and (2) does not adequately describe Entergy's status of compliance with the requirements of the ESA.

Entergy relies on the 1979 biological opinion testimony of Dr. Michael J. Dadswell as proof that Entergy does not require a separate incidental take permit covering the take of shortnose sturgeon at the Indian Point facility. Entergy argues that New York State "overlooked" this twenty-nine year old biological opinion in Contention 32, even though DEC acknowledged it in the Final EIS. Entergy Answer at 210; *see id.* at n. 871. The testimony is simply not relevant to the incidental take permit issue, nor does it provide an exemption to the incidental take requirements for shortnose sturgeon. Entergy fails to discuss language in the DEIS and Final EIS, immediately following the description of the 1979 testimony, notably that "[t]he generators are currently in the process of obtaining updated Incidental Take Permits from NMFS." Little Declaration, Exhibit L, Final EIS at 27; *see* Little Declaration, Exhibit K at IV -32. It is evident that at the time of the DEIS and the Final EIS, the operators of the Indian Point facility represented to the State that they needed an incidental take permit from NMFS. While the

Roseton and Danskammer Point facilities did apply for and receive an incidental take permit from NMFS, Indian Point never applied for the permit.

New York State disputes the *Environmental Report* downplaying violations of the ESA and the effect of impingement of shortnose sturgeon and Atlantic sturgeon at the Indian Point facility. See New York State Petition, Contention 32 at 296. Despite the available data and dead shortnose sturgeon collected at the site, Entergy argues that “shortnose sturgeon are not susceptible to impingement or entrainment.” Entergy Answer at 209. Such an argument strains credulity. Entergy’s arguments that the number of fish impinged are minimal and that “there is a well established population of shortnose sturgeon in the Hudson River,” are irrelevant. New York State Petition, Contention 32 at 296. Entergy also downplays the impacts of the once-through cooling system at Indian Point to the Atlantic sturgeon and dismisses the NMFS’s concerns by concluding that “the potential impact from entrainment or impingement for the Atlantic sturgeon is SMALL.” New York State Petition, Contention 32 at 296 (*quoting* ER § 4.10.5, p. 4-30). Mortality of a listed endangered species is cause for concern. *Jacobson Decl. at* ¶ 29. Under the ESA, Entergy does not have the right to cavalierly disregard the taking and killing of any endangered species in the New York State, or elsewhere in the United States.

Moreover, Entergy’s expert claims that “Mr. Jacobson’s stated concern about shortnose sturgeon is not well-founded.” Mattson Declaration, ¶ 36. His argument is based upon population estimates from the late 1970s indicating that the Hudson River population has increased by more than 400%. The State does not completely disagree with this information

about the endangered shortnose sturgeon population, but notes that the data that Dr. Mattson provides is irrelevant to whether Entergy violated the ESA. The fact remains that the shortnose sturgeon are an endangered species under the ESA. Any taking of shortnose sturgeon is illegal. NMFS has repeatedly stated that it is concerned about impingement and entrainment of sturgeon at the facility. *See* NMFS Jan. 2007 Letter and NMFS March 2007 Letter. Of course, the factual dispute between Mattson and Jacobson is a genuine dispute on material facts sufficient to sustain admissibility of a Contention.

Furthermore, an adequate assessment of the impacts of the license renewal on threatened or endangered species in accordance with the ESA must also include accurate estimates of the numbers of shortnose sturgeon currently being impinged. The *Environmental Report* is also lacking in this regard. Entergy can not adequately assess the impacts of the license renewal on threatened or endangered species in accordance with the ESA because no accurate estimates of the total numbers of shortnose sturgeon *currently* being impinged at this facility exist. In fact, impingement sampling at Indian Point has not been conducted in well over ten years. Jacobson Declaration ¶ 28. Correspondence between NMFS and Mr. Thomas, of Enercon Services, Inc. clearly demonstrates Entergy's inability to provide an adequate assessment of the impacts to threatened or endangered species. In response to the letter of Mr. Thomas, requesting information on the presence of listed species in the vicinity of Entergy's Indian Point power plant, NMFS requested that Entergy provide NMFS with the best available information on impacts of the facility, explaining that NMFS is concerned with the likelihood of impingement of

sturgeon on screens or racks at plant intakes. NMFS Jan. 2007 Letter at 3. Entergy indicated to NMFS that no studies have been conducted since 1998 regarding the potential for the continued operation of the Indian Point facility to affect sturgeon. Thus, no newer information is available for Entergy to provide to NMFS. NMFS March 2007 Letter at 1. Without current information, which is Entergy's burden to provide, Entergy cannot accurately assess the impacts of the proposed action on threatened or endangered species as required by the ESA.

Entergy erroneously claims that it is only required to assess the impacts of operations during the license renewal period on threatened and endangered species in the *Environmental Report*, but such analysis must include an assessment of "the impacts of the proposed action on threatened or endangered species in accordance with the *Endangered Species Act*." *Emphasis added.* 10 C.F.R. § 51.53. This analysis necessarily involves an adequate prospective assessment of whether the proposed action could jeopardize endangered and threatened species in the future in a violation of the ESA. Certainly Entergy does not believe that because the twenty years have not yet occurred, there is no basis to consider what is likely to occur in those twenty years. This is particularly true where, as here, there is substantial evidence that impingement has occurred in the past and there is no evidence that the steps Entergy has taken to prevent such impingement from occurring in the future have, in fact, proven successful.⁵⁰

⁵⁰ To illustrate this, NMFS has stated, "It is NMFS understanding that the screening and fish return system were designed to minimize entrainment and reduce the levels of injury and mortality associated with impingement. However, no studies have been conducted to demonstrate the effectiveness of these systems for sturgeon." NMFS March 2007 Letter at 1.

Entergy misconstrues the State's argument that granting a twenty-year license renewal could jeopardize the continued existence of the shortnose sturgeon. See New York State Petition, Contention 32 at 290, ¶ 1; *id.* at 291, ¶ 5; *id.* at 292, ¶ 8; *id.* at 295 ¶14; Jacobson Declaration ¶ 29. New York State does not "conclude that continued operations would suddenly jeopardize the species." *Entergy Answer at 209*. The State argues that in order to determine whether the renewal of Entergy's license *might* jeopardize the species, the NRC must fulfill its obligations under Section 7(a)(2) of the Endangered Species Act. One such NEPA obligation is an analysis of whether a twenty-year license renewal is likely to adversely affect the shortnose sturgeon and the Atlantic sturgeon. As stated in NEPA scoping comments on the Indian Point license renewal application from NMFS:

Any NEPA documentation prepared by NRC relating to the relicensing of this facility should contain an assessment of the facility's impact on shortnose and Atlantic sturgeon. Additionally, NMFS expects the NRC to initiate section 7 consultation with NMFS on the effects of the proposed action on listed species. In order to conduct a consultation, NMFS will need a complete project description and a complete assessment of the facility's impacts on listed species. NMFS expects that this assessment will include an estimate of the number of shortnose sturgeon likely to be impinged and/or entrained at the facility's intakes over the life of the proposed 20 year license.

Letter of M.A. Colligan, Assistant Regional Administrator for Protected Resources, National Marine Fisheries Service, Letter to Chief, Rules and Directives Branch, Division of Administrative Services, Office of Administration (Oct. 4, 2007) at 2 (NMFS Oct. 2007 Letter).

The assessment must include an estimate of the number of shortnose sturgeon likely to be

impinged and/or entrained at the facility's intakes over the life of the proposed twenty-year license. NMFS Oct. 2007 Letter at 2. Such an adequate assessment of the impacts of the license renewal on threatened or endangered species is not possible because no accurate estimates of the total numbers of shortnose sturgeon currently being impinged at this facility exist. *See* NMFS March 2007 Letter at 1. Thus, the *Environmental Report* does not provide the NRC with the required assessment of the facility's impacts on ESA listed species.

Significantly, Entergy did not address the concerns of NMFS in the *Environmental Report*. The *Environmental Report* states that Entergy "is not aware of any potential concerns regarding threatened or endangered species which could occur due to the site operations." *Environmental Report at 4-31*. This is directly contradicted by the NMFS correspondence in the *Environmental Report, Attachment A*. NMFS stated that it has "several concerns regarding the potential for the authorized withdrawals and discharges to affect [shortnose and Atlantic] sturgeon. NMFS's primary concern is the likelihood of impingement of sturgeon on screens or racks at plant intakes." NMFS Jan. 2007 Letter at 2 (*emphasis added*). Subsequent correspondence states that "[b]ased on the available information, NMFS remains concerned that some level of impingement and/or entrainment of sturgeon may continue to occur at the facility." NMFS March 2007 Letter at 1. Entergy's failure to mention the NMFS concerns – which NMFS sent to Entergy and its consultant before Entergy filed its license renewal application with the NRC – raises questions about the veracity of the material in the *Environmental Report*.

As New York State's Petition makes clear, a closed cycle cooling system would reduce the level of impingement and the impacts on the endangered shortnose sturgeon and the candidate threatened Atlantic sturgeon, thereby aiding in the conservation of these species. New York State Petition, Contention 32 at 293. NMFS's comments support this proposition, noting that "DEC has determined that BTA [Best Technology Available] for Indian Point is the construction of a closed-cycle cooling system to replace the existing once through cooling system. The closed cycle cooling system would dramatically decrease the amount of water withdrawn from the Hudson River and, as such, is likely to greatly decrease the number of organisms impinged and entrained at the facility's intakes." NMFS Jan. 2007 Letter at 2. The required analysis addressing this mitigation measure is notably omitted from the *Environmental Report* in violation of NEPA.

In conclusion, Contention 32 clearly presents evidence that impacts to endangered species from the operation of Indian Point were not adequately addressed in the *Environmental Report*, nor were adequate mitigation measures. The Contention (and documents in support) provides an adequate basis, is within the scope of this proceeding, is adequately supported in fact and law, and shows a genuine dispute on a material issue of law or fact as required by 10 C.F.R. § 2.309. The operation of Indian Point impinges and entrains endangered species and candidate threatened species, harming them and killing them. There is no dispute that such actions violate the Endangered Species Act. NEPA and the ESA require these environmental issues to be analyzed and compliance issues to be addressed. The *Environmental Report* fails

to meet these requirements. Therefore, because Contention 32 satisfies the admissibility requirements of 10 C.F.R. § 2.309(f), it should be admitted in this proceeding.

**THE ATOMIC ENERGY ACT GRANTS NEW YORK STATE
SIGNIFICANT HEARING RIGHTS AS AN INTERESTED STATE**

New York State included in its Petition a statement of its hearing rights as an interested state based on the provisions of 42 U.S.C. § 2021(l).⁵¹ The essence of those rights is the guarantee that any “interested state” will be given a “reasonable opportunity . . . to offer evidence, interrogate witnesses, and advise the Commission as to the application” Staff and Entergy take issue with New York State’s statutory rights and assert that whatever those statutory rights may mean they do not include the right to interrogate witnesses in any hearing where other parties have not be given the right to interrogate witnesses and that if New York State is admitted as a party as to any contention in this proceeding it loses all of its rights guaranteed by 42 U.S.C. § 2021(l). As the following discussion demonstrates these arguments are without merit.⁵²

First, Staff asserts that “New York seeks to be admitted as a party, and if it is in fact admitted, then the provisions of § 2.315(c) will not apply to it.” Staff Response at 134. New

⁵¹ See *Public Service Co. of Indiana, Inc.*, (Marble Hill Generating Stations, Units 1 and 2), CLI-75-4, 4 N.R.C. 20, 24-25 (ALAB 1976) (recognizing that governmental bodies, not private parties, are charged with the responsibility of identifying and protecting the public interest and that therefore private parties cannot be said to represent adequately a petitioning government’s interest).

⁵² New York State filed its statement regarding its hearing rights to alert the Board and parties to its position on the issue, not with the expectation that this was the time to resolve the issue in this proceeding. New York State believes that the most efficient manner in which this issue can be addressed is to await the Board’s resolution of the pending petitions to intervene at which time motions, pursuant to 10 C.F.R. § 2.310, are likely to be filed and the status of New York State in the proceeding will have been decided. Consideration of New York State’s hearing rights will then be able to be decided in the context of the status of this proceeding on issues which will bear on the application of 42 U.S.C. § 2021(l).

York State agrees that, as now written, § 2.315(c) is not applicable to New York State. In the 2004 Amendments to Part 2, the Commission added language in § 2.315(c) to declare that the rights and limitations it addresses are only applicable to those states that appear solely under § 2.315. “The presiding officer will afford an interested State, local governmental body (county, municipality or other subdivision), and affected, Federally-recognized Indian Tribe, *which has not been admitted as a party under § 2.309*, a reasonable opportunity to participate in a hearing.” 10 C.F.R. § 2.309(c)(emphasis added to identify language added by 2004 Amendments to Rules of Practice that were not contained in the predecessor regulation, 10 C.F.R. § 2.715(c)).

However, the Commission long ago resolved the question of the status of a state in a licensing proceeding by deciding a State is entitled to appear both as a party on its admitted contentions and as an “interested state” under 42 U.S.C. § 2021(l) on all other admitted contentions. *Project Management Corporation Tennessee Valley Authority Energy Research and Development Administration* (Clinch River Breeder Reactor Plant) ASLAB-354, 4 N.R.C. 383 (1976):

We think that the rights conferred by Section 2.715(c) [which did not include language added in the 2004 Amendments] are available to the State here in connection with those issues not embraced by its single contention-i.e., those issues as to which it does not enjoy full party status. Any other interpretation not only would place an undue premium upon literalism but, in addition, would derogate the purposes of Section 2.715(c) and its statutory source, Section 274 of the Atomic Energy Act, 42 U.S.C. 2021(l). See ALAB-317, *supra*, NRCI-76/3 at 178-79. The design of both provisions is to accord to States the privilege of fully participating in licensing proceedings and advising the Commission on the resolution of issues considered therein without being obliged in advance to set forth any affirmative contentions of its own (as is required of private intervenors). This design would scarcely be

served by a holding that, should a State elect to file one or more contentions and thus become a 'party' to the proceeding under Section 2.714(a), it thereby forfeits all right to exercise its participational rights under Section 2.715(c) insofar as all other issues are concerned. Nor do we perceive any other basis upon which such a holding could be justified. As a practical matter, it undoubtedly would inhibit the filing by States of affirmative contentions; at least in circumstances where the State's Section 2.715(c) involvement would be enough to insure that its concerns were fully explored by the Licensing Board. Yet there will often be a decided advantage to be gained in terms of sharpening the issues if the State elects to take a positive stand at an early stage.

Id. at 392-3 (footnotes omitted). If a state becomes a party, as New York State seeks, § 2.315(c) is not applicable to it, and its right to cross-examination is determined by the provisions of 42 U.S.C. § 2021(1). Under that provisions, a "reasonable opportunity" must be provided to "interrogate witnesses."

Second, both Staff and NRC challenge the view that the statutory right afforded New York State under 42 U.S.C. § 2021(1) to a "reasonable opportunity . . . to offer evidence, interrogate witnesses, and advise the Commission as to the application" gives an interested state the right to cross-examine witnesses directly. Their argument begins with proposition that under the Atomic Energy Act and the Administrative Procedure Act, the right to cross examine is not guaranteed under all circumstances but that these provisions only "allow each party . . . [to] conduct such cross examination as may be necessary for a full and true disclosure of the facts." Entergy Answer at 10, n.36. For the purposes of this discussion, New York State does not disagree with that conclusion because Entergy's argument is besides the point. The point of disagreement is the entirely different question of whether, as Entergy and Staff insist, there is

only one circumstance where cross examination is necessary for “a full and true disclosure of the facts” and that is if a witness is suspected of lying or of having an evil motive, citing 10 C.F.R. § 2.310(d) and *Entergy Nuclear Vermont Yankee* (Vermont Yankee Nuclear Power Station), LBP-04-31, 60 N.R.C. 686, 710-711 (ASLB 2004)).

However, with the exception of the holding in *Vermont Yankee*, which New York State respectfully submits is in error, there is no conflict between the right to a “reasonable opportunity” to conduct cross-examination in § 2.315(c) and the rest of Part 2. For example, 10 C.F.R. §2.310(d) provides that a hearing “will be conducted under subpart G” if, *inter alia*, the presiding officer “finds that resolution of the contention or contested matter necessitates resolution of issues of material fact relating to the occurrence of a past activity”. *Id.* Similarly 10 C.F.R. § 2.309(g) assures a party the right to Subpart G procedures where the party demonstrates that the “resolution of the contention necessitates resolution of material issues of fact which be best determined through the use of” identified Subpart G procedures. In defending the regulations against challenge in *Citizens Awareness Network, Inc. v. NRC*, 391 F.3d 338 (1st Cir. 2004), the Commission assured the First Circuit that its regulations and the Administrative Procedure Act provisions were co-extensive and that all the rights secured by the APA are also secured by the Commissions hearing procedures. *CAN*, 391 F.3d at 351 (“The Commission represents that, despite the differences in language, it interprets the standard for allowing cross-examination under the new rules to be equivalent to the APA standard.”) Thus, the Commission’s own authoritative interpretation of its regulations is that it is sufficient to establish

a right to all the procedures of Subpart G, including the right to cross-examination by demonstrating “that resolution of the contention . . . necessitates resolution of issues of material fact relating to the occurrence of a past activity” and nothing more.⁵³

Once the admissibility of Contentions is determined and assuming it is granted party status, New York State will submit its motion for Subpart G procedures as authorized by § 2.309(g), including the right to cross-examination, based upon the specific contentions accepted for hearing. Thus, this is not the place to detail all the bases for those procedures. However, the Board is aware that the issues raised by many contentions submitted by all parties are not issues which can be rationally decided on the bare bones of the written word. When such complex and controversial issues are involved, oral presentations, with the benefit of probing questions from the parties and the Board are the only way to get to the facts.

We distinguish between the assertion of a broad right of cross-examination, such as that argued to this court, and a claim of a need for cross-examination of live witnesses on a subject of critical importance which could not be adequately ventilated under the general procedures. This is the kind of distinction that this court made in its en banc opinion in *American Airlines v. CAB*, *supra*, 123 U.S.App.D.C. at 318-319, 359 F.2d at 632-633. We see no principled manner in which firm time limits can be scheduled for cross-examination consistent with its unique potential as an “engine of truth”-the capacity given a diligent and resourceful counsel to expose subdued premises, to pursue evasive witnesses,

⁵³ This statement in 10 C.F.R. § 2.310(d) is an independent clause (it has a subject and a verb and expresses a complete thought) and is followed by a second independent clause that identifies another, alternative criteria, for Subpart G entitlement. Reading the two clauses as one, as the *Vermont Yankee* ASLB court did, not only violates the rules of grammar, but also is inconsistent with the language in § 2.309(g) and, most importantly, contradicts the Commission’s own interpretation of the relevant standard in its filing with the First Circuit in *CAN*.

to "explore" the whole witness, often traveling unexpected avenues.

International Harvester Co. v. Ruckelshaus 478 F.2d 615, 631 (D.C. Cir.1973). Where issues of the complexity involved in this proceeding are presented it is unrealistic to expect that the parties can fully develop their issues without being able to ask and receive answers to their questions or that the Board can resolve disagreements among the parties about the facts and the interpretations to be placed on those facts without the benefit of live testimony to "expose subdued premises . . . and to 'explore' the whole witness, often traveling unexpected avenues." *Id.*

Again, this issue need not be decided now, but New York identified it in the Petition to highlight the issue at the earliest opportunity.

CONCLUSION

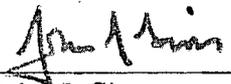
For the above-stated reasons, New York State requests that its contentions be admitted and that New York State be granted party status.

Respectfully submitted,

Dated: February 22, 2008

Andrew M. Cuomo
Attorney General
for the State of New York
and the People of the State of New York

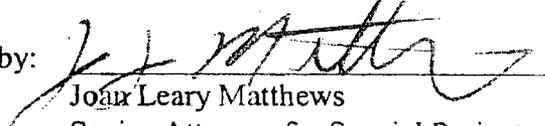
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Appendix A

| “BARE ASSERTIONS” BY ENTERGY OR STAFF THAT IGNORE SUBSTANTIAL EVIDENCE AND ANALYSIS IN NEW YORK STATE’S PETITION | | |
|--|---|--|
| Entergy’s Unsupported Assertion¹ | NRC Staff’s Unsupported Assertion² | Reasoning and Evidence Presented by New York State and Ignored by Entergy and Staff³ |
| CONTENTION 3 - p. 42-43 “[the expert’s] bald and conclusory assertions fail to directly controvert the content of the LRA” | CONTENTION 3 | CONTENTION 3 - pp. 73-77 ¶¶ 6, 7 cites to specific pages & sections of the LRA; Dr. Blanch’s Declaration & 13-page chart examining 70 Draft GDC criteria in relation to IP2 & IP3 LRA |
| CONTENTION 4 - p. 44 lacks a factual or legal foundation (generally) | CONTENTION 4 | CONTENTION 4 - pp. 78-80 ¶¶ 1, 2, 5, 6, 7, & Declaration of Dr. Schlissel |
| CONTENTION 5 - p. 54-55 “Once again Petitioner makes sweeping statements and generalizations that do not support its contention.” (Regarding aging of piping systems) | CONTENTION 5 - p. 36 “NYS’s reliance on vague or generalized studies and unsubstantiated assertions” | CONTENTION 5 - pp. 84-92, ¶¶ 22-28 citing to specific parts of the LRA, NRC inspection documents and studies related to piping systems at Indian Point Vol. I - Dr. Hausler’s 24-page detailed assessment of specific component & system aging issues, including piping systems, present at IP2 & IP3; Dr. Rice’s similar 10-page analysis of both units. Both experts refer to NRC studies & documents as well. |
| CONTENTION 6 - p. 57 [Petitioner] proffered baseless, and frequently inaccurate, claims about the LRA’s treatment of aging cables | CONTENTION 6 - p. 41 “bare assertion and speculation” that program will not follow the regulations | CONTENTION 6 - pp. 94-99, ¶¶ 12, 14-17 relate technical studies of management approaches to aging cables to specific sections of the LRA & to the extent to which Entergy’s specific commitments fail to satisfy regulatory requirements |

¹ Page numbers reference Entergy’s Answer

² Page numbers reference Staff Response

³ Page numbers reference New York State’s Petition and Vols. I & II of the Declarations

| “BARE ASSERTIONS” BY ENTERGY OR STAFF THAT IGNORE SUBSTANTIAL EVIDENCE AND ANALYSIS IN NEW YORK STATE’S PETITION | | |
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| Entergy’s Unsupported Assertion | NRC Staff’s Unsupported Assertion | Reasoning and Evidence Presented by New York State and Ignored by Entergy and Staff |
| CONTENTION 7 - p. 65 [Petitioner’s] “baseless claims” ignore the information presented by the Applicant in the LRA | CONTENTION 7 - p. 43 fails to identify an omission from the application | CONTENTION 7 - pp. 102-103, ¶¶ 4-6 discusses specific sections and/or omissions in LRA |
| CONTENTION 8 - p. 69 [Petitioner’s] “baseless claims” ignore information presented in LRA | CONTENTION 8 | CONTENTION 8 - p. 105, ¶¶ 4-8 discusses specific sections and/or omissions from LRA |
| CONTENTION 9 - p. 79 “The remaining bulk of the contention consists of a meandering discussion of energy conservation initiatives that contain bare assertions and speculation.” | CONTENTION 9 | CONTENTION 9 - pp. 110-120, ¶¶ 5, 7-9, 13-21 summarizes regional energy forecasts & economic studies & their relation to Indian Point; Declarations of energy experts Drs. Bradford & Schlissel-energy & economic cost-benefit analysis of relicensing alternatives |
| CONTENTION 10 - p. 83 “other than the bare assertions regarding the purported inadequacy of the ER, the Petitioner fails to identify any <i>specific</i> deficiencies in Entergy’s discussion of alternatives.” | CONTENTION 10 | CONTENTION 10 - pp. 122-137, ¶¶ 3-6, 13, 14, 28, 29 cites to specific deficiencies in Entergy’s discussion of alternatives |
| CONTENTION 11 - p. 84, 86 fails to provide a concise statement of alleged facts or expert opinions (generally) | CONTENTION 11 - p. 49 fails to provide factual support for its assertion that alternative energy options will not be pursued | CONTENTION 11 - pp. 139-40, ¶¶ 4, 6 notes that the ER dismisses alternative energy alternatives as infeasible; relies on the expert studies & testimony provided in Contentions 9 & 10 above |
| CONTENTION 12 - p. 87 “Bases 2 through 10 . . . amount to a series of unsupported criticisms . . . as they include no references to documents or expert opinion.” | CONTENTION 12 - p. 50 “fails to establish the relevance of the report on which it relies.” | CONTENTION 12 - pp 142-145, ¶¶ 13, 15, 17-20 relate the findings of numerous expert reports to the Indian Point site, surrounding region, Applicant’s LRA & Indian Point decontamination cost estimates |

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| CONTENTION 13 - p. 96 “perfunctory and unsuccessful attempt to meet the pleading requirement” that fails to show an increase in the risk of an accident” | CONTENTION 13 - p. 52 “unsupported and speculative” in that it does not show a material change in the SAMA analysis is likely | CONTENTION 13 - pp. 148-149, ¶¶ 5, 6, 8, 9, 12 cite to the LRA & prior safety evaluations of IP3 by Office of Nuclear Reactor Regulation to demonstrate an increased risk of an accident & deficiencies in the SAMA analysis that understate the risk |
| CONTENTION 14 - p. 97 the challenge to Entergy’s SAMA analysis is “grossly unsupported” | CONTENTION 14 - p. 54 “lacks specificity” | CONTENTION 14 - pp. 150-54, ¶¶ 4-7, 11-14 cite to specific deficiencies in Entergy’s SAMA analysis, supported by 35-page detailed seismic analysis of Indian Point site prepared by seismic experts Sykes & Seeber (Columbia U.), references to Supplemental Environmental Reports for Indian Point, & NRC NUREGs |
| CONTENTION 15 - p. 106 Petitioner has not presented sufficient factual information or expert opinion to show that Entergy’s SAMA analysis is “fatally flawed” | CONTENTION 15 | CONTENTION 15 - pp. 155 - 162, ¶¶ 2-6, 11, 19-22 demonstrate significant flaws in the SAMA analysis, supported by seismic expert testimony as in Contention 14 |
| CONTENTION 16 - p. 113 vague and unsupported complaints regarding the air dispersion model | CONTENTION 16 - p. 57 fails to show a deficiency in the air model used | CONTENTION 16 - pp. 163-166, ¶¶ 6-10 demonstrating specific deficiencies in the air model used; Declarations Vol. II includes 21-page expert analysis of the deficiencies of Entergy’s air model |
| CONTENTION 17 - p. 117 “baseless speculation . . . bare assertions” regarding alternative land use scenarios and bare assertions regarding spent fuel | CONTENTION 17 | CONTENTION 17 - pp. 170-174, ¶¶ 21-25 cites to regional land use, economic studies and census data; Vol. II expert economic analysis of property values for site area & basis for opinion that regarding land value impacts of license renewal |

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| <p>CONTENTION 19 - p. 119 oppose on same grounds as Contention 3 [bald and conclusory assertions fail to directly controvert the content of the LRA]</p> | <p>CONTENTION 19</p> | <p>CONTENTION 19 - pp. 198-202, ¶¶ 3-7 extensively references to the inadequacies of the LRA & UFSAR for both units, Declarations Vol. I includes 10-page Declaration of Paul Blanch and 13-page chart examining 70 GDC criteria in relation to IP2 and IP3 LRA</p> |
| <p>CONTENTION 20 - pp. 120-121 fails to identify deficiencies in LRA, no factual support generally, and incorporates argument from Contention 13 [“perfunctory and unsuccessful attempt to meet the pleading requirement” that fails to show an increase in the risk of an accident]</p> | <p>CONTENTION 20</p> | <p>CONTENTION 20 - p. 203, ¶¶ 3, 4, 10 points to a specific deficiency in the LRA, p. 206, ¶¶ 8, 11 presents documents suggesting a higher risk of accident (fire)</p> |
| <p>CONTENTION 21 - p. 122 incorporates Contention 14 arguments [challenge to Entergy’s SAMA analysis is “grossly unsupported”], p. 123 fails to identify deficiencies in the LRA</p> | <p>CONTENTION 21 - p. 68 NY, without proffering sufficient information or evidence, argues that IP1 components are used or shared by IP2 and IP3 and fails to specify the IP1 components of concern to it, and that those components have not been adequately considered in the Applicant’s aging management program.”</p> | <p>CONTENTION 21 - p. 207, ¶ 1 cites to decommissioning reports and IP1’s UFSAR to document that IP2 & IP3 share components with IP1;</p> <p>p. 208 ¶¶ 5, 6 cite specific deficiencies in the LRA; Declarations Vol. I include 35 pages of detailed seismic analysis of Indian Point site prepared by seismic experts Sykes and Seeber (Columbia U.)</p> |

| “BARE ASSERTIONS” BY ENTERGY OR STAFF THAT IGNORE SUBSTANTIAL EVIDENCE AND ANALYSIS IN NEW YORK STATE’S PETITION | | |
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| Entergy’s Unsupported Assertion | NRC Staff’s Unsupported Assertion | Reasoning and Evidence Presented by New York State and Ignored by Entergy and Staff |
| <p>CONTENTION 22 - p. 123 Entergy repeats its opposition as in Contention 15 [Petitioner has not presented sufficient factual information or expert opinion to show that Entergy’s SAMA analysis is “fatally flawed”]</p> | <p>CONTENTION 22 - p. 70 New York fails to show any reason to believe that the Applicant’s SAMAs considered inadequate assumptions or inputs, or that they would significantly change if new seismic information were to be considered . . . and fails to provide any grounds to show the LRA is lacking in any specific respects</p> | <p>CONTENTION 22 - pp. 213-213, ¶¶ 7, 8, 13, 14 point to specific deficiencies in the LRA; p. 214 cites to specific inadequacies in Entergy’s ER/SAMA analysis</p> <p>Declarations Vol. I includes 35 pages of detailed seismic analysis of Indian Point site prepared by seismic experts Sykes & Seeber (Columbia U.)</p> |
| <p>CONTENTION 23 - p. 125 Petitioner’s claims that the LRA “fails to provide meaningful inspection data and lacks a comprehensive inspection program for the proposed life extensions is entirely without support . . . and does not controvert any particular information in the LRA.”</p> | <p>CONTENTION 23</p> | <p>CONTENTION 23 - p 219, ¶¶ 9, 10 & the incorporated references to Dr. Lahey’s Declarations provide support for lack of a meaningful inspection program</p> <p>¶¶ 16, 18 of Dr. Lahey’s Declaration specifically controvert information in the LRA</p> |
| <p>CONTENTION 24 - p. 133 Petitioner does not explain, with the requisite level of basis and specificity, why Entergy’s approach on water/cement ratios is inappropriate</p> | <p>CONTENTION 24 - p. 74 the citations provided by New York do not support Contention 24</p> <p>p. 75 The LRA lists the containment as subject to an AMR, and NY has not explained why the Applicant’s list is non-compliant</p> | <p>CONTENTION 24 - p. 222, ¶¶ 6-7 cite studies that provide specific examples demonstrating why Entergy’s water/cement ratios is inappropriate</p> <p>¶¶ 28-30 of Dr. Lahey’s Declaration provides additional support on this issue</p> |

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| <p>CONTENTION 25 - p. 136 Petitioner fails to provide any references to specific sections of the LRA . . . and Lahey declaration simply makes bare assertions regarding what purportedly must be considered as part of license renewal regarding embrittlement . . . and does not even reference the relevant sections of the LRA on embrittlement;</p> | <p>CONTENTION 25 - p. 76 NY fails to state or explain why or how the applicant's TLAAAs do not show that the associated SSCs will perform their intended functions for LOCAs or transients.</p> <p>NY fails to identify any regulation that requires the application to include separate analyses of LOCAs or transients as part of the LRA.</p> | <p>CONTENTION 25 - p. 223, ¶¶ 1, 4 identifies regulation that requires aging management analysis</p> <p>¶¶ 14 - 16, 18 Lahey Declaration identifies specific sections of the LRA which address embrittlement -</p> |
| <p>CONTENTION 26 - p. 142 This proposed contention is nothing more than a string of hyperbolic and <i>ad hominem</i> assertions that fail to identify any valid safety concern or specific deficiency in the LRA.</p> <p>p. 143 Petitioner—without any technical analysis or factual support—claims that the CUF values in LRA Tables 4.3-13 and 4.3-14 are “alarming” . . . and fails to controvert the acceptability of the approach set forth in LRA Section 4.3.3,</p> <p>p. 148 Petitioner offers no technical or scientific references to support its highly exaggerated claims of “catastrophic” component failures and “dangerous” pipe ruptures. The Declaration of Dr. Lahey offers no support either . . . Dr. Lahey does not provide a “reasoned basis or explanation” for his conclusion that the LRA is inadequate.</p> | <p>CONTENTION 26</p> | <p>CONTENTION 26 - p. 228, ¶¶ 2, 3 summarizes the technical support provided by Dr. Lahey for claim that CUF values are not sufficient to ensure safety</p> <p>p. 230-31 ¶ 7-10 controverts the acceptability of the approach set forth in LRA 4.3</p> <p>¶¶ 19-22 of Dr. Lahey’s Declaration provides his expert testimony on the possibility of catastrophic failure due to metal fatigue</p> <p>¶¶ 1, 15, 17, 33 of Dr. Lahey’s Declaration describes the technical & scientific references used to support his well founded concerns</p> <p>¶¶ 5, 14, 16, 18, 20, 21, 22, 26, 27 & 30 of Dr. Lahey’s Declaration provide a reasoned basis or explanation for his conclusion that the LRA is inadequate</p> |

| “BARE ASSERTIONS” BY ENTERGY OR STAFF THAT IGNORE SUBSTANTIAL EVIDENCE AND ANALYSIS IN NEW YORK STATE’S PETITION | | |
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| Entergy’s Unsupported Assertion | NRC Staff’s Unsupported Assertion | Reasoning and Evidence Presented by New York State and Ignored by Entergy and Staff |
| CONTENTION 27 | CONTENTION 27 - p. 79 “to the extent that New York wants the NRC to review the safety of the Unit 1 spent fuel pool (“SFP”), along with Units 2 and 3 SFPs, it fails to show that the Unit 1 SFP performs an intended function for Units 2 and 3.” | CONTENTION 27 - pp. 70, 81, 150 & 196 provide ample support throughout the Petition demonstrating that use of IP1’s SFP & in footnotes 15 & 35, NYS cites to NRC Bulletin 94-01 & NUREG 1742, Vol. 2, p 2-8, both of which state that Unit 1’s SFP perform intended functions for Units 2 & 3 |
| CONTENTION 28 - p. 156 There is also no known drinking water pathway associated with groundwater or the Hudson River in the region surrounding Indian Point . . . and [p. 157] Petitioner has not disputed any of Entergy’s radiological findings as set forth in the ER or provided any basis, expert or otherwise, for their assertion that EPA’s drinking water standards are even applicable here. | CONTENTION 28 - p. 80 Nothing in [the expert] Declaration, however, controverts information in Entergy’s application regarding the environmental impacts associated with known leaks at Indian Point’s spent fuel pools. | CONTENTION 28 - ¶¶ 24-26 of Dr. Rice’s Declaration which describe a known pathway associated with groundwater in the region surrounding Indian Point ¶¶ 2, 4, 12, 13, 15, 16 of the contention controvert information in Entergy’s application regarding environmental impacts associated with known SFP leaks and ¶¶ 15-19 of the Dr. Rice’s Declaration provides additional support |
| CONTENTION 32 - p. 209 Petitioner has failed to provide any expert opinion to bolster its conjecture, or reference to the ER that might support [the species is susceptible to impingement or entrainment] | CONTENTION 32 - p. 88 studies provided do not include Indian Point, and Petitioner provides no evidence that impingement or entrainment actually occurs at Indian Point | CONTENTION 32 - p. 291-297, ¶¶ 5, 11, 12, 15, 17 provide expert opinion & evidence that impingement or entrainment occurs & can occur ¶ 17 of the contention cites to a section of Entergy’s ER that <i>admits</i> that the species is impinged by Indian Point screens |

Appendix B

| REFERENCES TO THE STRUCTURAL INTEGRATION OF INDIAN POINT UNIT 1 WITH UNITS 2 & 3 CONTAINED IN THE UFSAR OF INDIAN POINT UNITS 2 & 3 | |
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| UFSAR Section | IP1 System or Components in shared use by IP2 or IP3 |
| 1.11.6.3. | Seismic and Wind Analysis of the Superheater Stack of IP1 |
| 1.11.6.4. | Seismic and Tornado Evaluation of the Superheater Building at IP1 |
| 4.2.11 | Reactor Vessel Level Indication System sensors and transmitters to monitor temperature, located on the accident assessment panel in Unit 1/Unit 2 central control room |
| 6.4.2.1. | Containment Cooling System - transmitters located on same panels in common central control room |
| 7.7.3.3.7. | Central Control Room Emergency Lighting (shared systems) |
| 7.7.4 | Communications (shared systems) |
| 8.3. | Alternative Shutdown System - (IP1 is to provide additional independent and separate power supplies) |
| 9.2.2.5. | Chemical and Volume Control Systems - Recycling System (boron waste water fed from IP2 into IP1 waste collection tanks) |
| 9.6. 1 | Service Water System (“connections have been provided so the turbine generator lube oil coolers and other non-safety related load can be supplied from Unit 1 river water system.”) |
| 9.6.3. | City Water System (“City water for the Indian Point Unit 2 comes from the city water main on Broadway <i>via the Unit 1 mains and storage tanks</i> . Unit 2 is tied to this system primarily through piping connections at two locations on the low pressure header (see plant drawings 192505, 192506, and 193183 formerly UFSAR fig. 9.6-5) One connection is the vicinity of the Unit 1 superheater building on the south side of the header. This connection provides water for: emergency makeup to the house service boilers, cooling the house service boiler water samples, general usage at the house” etc.) |
| 9.6.4.1. | Instrument Air System - shared systems |
| 9.6.4.2. | Station Air System - shared water cooling system |

| REFERENCES TO THE STRUCTURAL INTEGRATION OF INDIAN POINT UNIT 1 WITH UNITS 2 & 3 CONTAINED IN THE UFSAR OF INDIAN POINT UNITS 2 & 3 | |
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| UFSAR Section | IP1 System or Components in shared use by IP2 or IP3 |
| 9.6.5. | Heating System (“The heating system for Unit 2 represents an extension of the heating system for Unit 1. Package boilers have been installed to supply steam for Unit 2 and also to Unit 3”) |
| 10.2.1.5. | Steam Generator Blowdown (blowdown may be manually diverted to the support facility (Unit 1 site) secondary boiler blowdown purification system flash tank) |
| 10.2.4. | Circulating Water System (sodium hypochlorite may be stored in two 4000 gal. tanks in the hypochlorite room of Unit 1 screenwall house) |
| 11.1.2.1 | Waste Disposal System (the liquid waste holdup tank is processed by sending its contents to the Unit 1 waste collection system, which has four tanks of 75,000 gal each) |
| 11.1.2.1.3. | Solids Processing - Unit 1 containment building has been modified for use as an interim onsite storage facility for dry active waste |
| 11.2.3.10 | Secondary Boiler Blowdown Purification System |
| 11.2.3.2.11 | Steam Generator Blowdown Purification System Cooling Water Monitor |
| 11.2.3.2.12 | Liquid Waste Distillate Radiation Monitor |
| 11.2.3.2.14. | Effluent Discharge to ENIP3 |
| 11.2.3.18. | Sphere Foundation Sump Liquid Effluent |
| 11.2.3.4.7. | Control Room Air Intake |
| 14.1.5.2.1. | Core and Coolant Boundary Protection System/Chemical and Volume Control System Malfunction (“In addition, there could be a source of water from Indian Point Unit 1.”) |