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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Commission

In the Matter of	)	
	)	
Entergy Nuclear Vermont Yankee, LLC	)	Docket No. 50-271-LR
and Entergy Nuclear Operations, Inc.	)	ASLBP No. 06-849-03-LR
	)	
(Vermont Yankee Nuclear Power Station)	)	

ENTERGY'S RESPONSE IN OPPOSITION TO NEW ENGLAND COALITION'S PETITION FOR REVIEW OF LBP-09-09

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Pursuant to 10 C.F.R. § 2.341(c)(2), Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc. ("Entergy") submit this response in opposition to the New England Coalition's Petition for Review of the Licensing Board's Full Initial Decision, LBP-09-09 (July 23, 2009) ("Petition") in the Vermont Yankee Nuclear Power Station ("VY") license renewal proceeding. The Petition should be denied because the New England Coalition ("NEC") fails to address the standards in 10 C.F.R. § 2.341(b) for requesting review of the Full Initial Decision[1] and does not identify any error or abuse of discretion by the Atomic Safety and Licensing Board ("Board") warranting review.

NEC's Petition claims that the Board unfairly treated NEC's witness Dr. Joram Hopenfeld ("Dr. Hopenfeld") and exhibited bias against him. Petition at 12-14. This allegation is made without a single citation to the record or any attempt to explain how the alleged bias

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[1] LBP-09-09, 70 N.R.C. __, slip op. (July 8, 2009) ("Full Initial Decision"). At several points, NEC's Petition appears to be seeking Commission review of the Board's earlier Partial Initial Decision (Ruling on Contentions 2A, 2B, 3, and 4), LBP-08-25, 68 N.R.C. __ (Nov. 24, 2008) ("LBP-08-25"). See Petition at 2, 14, 19. However, the time for appealing the Partial Initial Decision expired 15 days after its issuance on all matters other than Contentions 2, 2A, and 2B, and the decision became final as to those matters forty days after issuance. LBP-08-25 at 154. Because NEC did not appeal LBP-08-25, any appeal of Contentions 3 and 4 is now barred.

resulted in any erroneous findings by the Board. While the Board asked probing questions, it treated all parties equally. NEC's unfounded and intemperate attack on the Board suggests that it is more interested in manufacturing a media message than pursuing a legitimate appeal.

NEC's Petition also challenges the Board's decision to reject a new contention propounded by NEC in April 2009.[2] Petition at 14-19. NEC essentially argues that the Board should have decided the issues relating to the admissibility of the proposed contention the way NEC and its expert opined instead of the way the Board did in its Full Initial Decision. However, no error was committed by the Board in declining to admit the contention, and the Board's ruling does not warrant review by the Commission.

Finally, the introductory section of NEC's Petition appears to claim that the Board erred by considering at the evidentiary hearing a contention that, up to a short time before the hearing, had been ruled to be in abeyance and outside the hearing's scope. Petition at 9-10.[3] As discussed below, this did not happen. To the contrary, the contention at issue continued to be held in abeyance until the Board issued its Full Initial Decision.

I. STATEMENT OF CASE

A. Procedural History

On January 25, 2006, Entergy filed its application for the renewal of the VY operating license for a term of twenty years starting on March 21, 2012 ("Application"). On March 27, 2006, the Commission published a notice of opportunity to request a hearing on the Application.

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[2] New England Coalition, Inc.'s Motion for Leave to File a Timely New Contention and Motion to Hold in Abeyance Action on this Proposed Contention Until Issuance of NRC Staff Supplemental Safety Evaluation Report (Apr. 24, 2009) ("NEC's Motion").

[3] This claim is contained in the "Background" of the Petition, but is not made part of NEC's argument ("Discussion"). It is unclear whether NEC intends that it be part of its appeal.

71 Fed. Reg. 15,220 (Mar. 27, 2006). On May 26, 2006, petitions to intervene and requests for hearing, each including contentions, were filed by several entities, including NEC.

On September 22, 2006, the Board admitted four of NEC's proposed contentions (NEC Contentions 1 through 4) and one of the contentions (DPS Contention 1) proffered by the Vermont Department of Public Service. LBP-06-20, 64 N.R.C. 131, 162-67, 175-96 (2006). Subsequently, DPS Contention 1 was settled and dismissed by the Board; and the admission of NEC Contention 1 was reversed by the Commission. CLI-07-16, 65 N.R.C. 371, 375 (2007).

The remaining NEC contentions were set for an evidentiary hearing. By the time the hearing was held, two new NEC Contentions – Contentions 2A and 2B – had been admitted for litigation[4] and original Contention 2 was being held in abeyance; so the hearing involved NEC Contentions 2A, 2B, 3, and 4.

A four-day hearing was held in Newfane, Vermont on July 21-24, 2008 pursuant to the provisions of Subpart L to 10 C.F.R. Part 2. At the hearing, Entergy, the NRC Staff, and NEC presented their testimony on the NEC contentions and were examined by the Board. After the parties filed proposed findings of fact and conclusions of law, the Board issued its Partial Initial Decision on November 24, 2008. In it, the Board decided NEC's Contentions 3 and 4 in Entergy's favor. LBP-08-25 at 152-53.[5] With regard to NEC Contentions 2A and 2B, the Board ruled in favor of Entergy on all respects but one, and instructed Entergy either to perform certain additional analyses, or submit an adequate aging management program ("AMP") for the

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[4] Memorandum and Order (Ruling on NEC Motions to File and Admit New Contention), LBP-07-15, 66 N.R.C. 261(2007) ("LBP-07-15"); Order (Granting Motion to Amend NEC Contention 2A) (Apr. 24, 2008) ("April 24, 2008 Order.")

[5] NEC Contentions 3 and 4 are not involved in NEC's Petition, and the opportunity for appealing the Board's decision on those contentions expired in December. See note 1, supra. Therefore, Contentions 3 and 4 will not be discussed further in this Response.

components at issue. Id. at 66-67. That aspect of the Partial Initial Decision, and the Full Initial Decision that followed it, are summarized next.

B. The Environmentally Assisted Fatigue ("EAF") Contentions

Entergy's license renewal Application included an initial assessment indicating that, if the VY license were extended for twenty years, certain components would have an environmentally assisted metal fatigue cumulative usage factor ("CUF") greater than unity. LBP-08-25 at 13, 31. Under such circumstances, NRC regulations require that the applicant "demonstrate" that the effects of aging (i.e., cracks) "will be adequately managed for the period of extended operation." 10 C.F.R. § 54.21(c)(1)(iii). Entergy's Application initially responded to this regulatory requirement by committing to either (1) refine its CUF calculations to show that the CUFs were really less than unity, or (2) address any potential metal fatigue cracking at locations where the CUF remained greater than unity through an AMP. See LBP-08-25 at 13, 31.

NEC's Contention 2 asserted that "Entergy's License Renewal Application does not include an adequate plan to monitor and manage the effects of aging [due to metal fatigue] on key reactor components that are subject to an aging management review, pursuant to 10 C.F.R. § 54.21(a) and an evaluation of time limited aging analysis, pursuant to 10 C.F.R. § 54.21(c)." LBP-06-20, 64 N.R.C. at 183 (footnote omitted). The Board admitted the contention, finding that NEC had raised a litigable issue "whether Entergy's 'plan to develop a plan' to manage environmentally assisted metal fatigue is sufficient to meet the license renewal requirements of 10 C.F.R. § 54.21(c)(1)(i)-(iii)." Id. at 186.

In August 2007, Entergy followed up on its Application commitment by issuing a set of refined calculations of environmentally assisted fatigue at the nine reactor locations. These

calculations, referred to as the "refined fatigue analyses" or the "CUFen Reanalyses," indicated that environmentally assisted cumulative usage factors at the nine locations would not exceed unity, hence the potential formation of component cracks due to metal fatigue during the period of extended operations ("PEO") after license renewal was not a concern. LBP-08-25 at 14.

In September 2007, NEC filed a motion to file a new contention claiming that Entergy's refined fatigue analyses were flawed. In November 2007, the Board admitted NEC's new contention (identifying it as NEC 2A), which was defined as alleging that the "analytical methods employed in [environmentally corrected CUF or] CUFen Reanalysis were flawed by numerous uncertainties, unjustified assumptions, and insufficient conservatism, and produced unrealistically optimistic results." LBP-07-15, 66 N.R.C. at 270. The Board ordered that the parties litigate NEC Contention 2A, while holding NEC Contention 2 in abeyance. Id. at 271.

In the course of its review of the refined fatigue analyses, the NRC Staff questioned the way the "Green's Function" methodology was used in the calculations to compute stresses for three reactor components: the feedwater ("FW"), core spray ("CS"), and reactor recirculation outlet ("RO") nozzles. The Staff opined that the methodology might not lead to conservative estimates of the stress loads at certain locations in those components. To resolve the Staff's concerns, Entergy agreed to perform a confirmatory CUFen analysis without using the Green's Function methodology on FW nozzle – which Entergy and the Staff agreed was bounding of the other two nozzles. This new environmentally assisted fatigue analysis of the FW nozzle was referred to as the "Confirmatory CUFen Analysis." LBP-08-25 at 15.

Entergy provided the Confirmatory CUFen Analysis to NEC in February 2008, and in March 2008 NEC filed a motion to amend Contention 2A to also challenge that analysis. NEC asserted that the Confirmatory CUFen Analysis did not validate the results of the refined fatigue

analyses because it only resolved one of many alleged deficiencies in the refined fatigue analyses and only addressed the feedwater nozzle which, in NEC's view, was not bounding for the other components. Id. at 15-16. The Board admitted NEC's proposed contention, which it treated as a subset of Contention 2A and designated "Contention 2B." Id. at 16; April 24, 2008 Order at 2.

Contentions 2A and 2B were set for hearing, with Contention 2 remaining in abeyance. As the Board had explained, the parties were not to litigate Contention 2 unless and until Entergy returned to reliance on an aging management program (i.e., if NEC prevailed on Contentions 2A and 2B). LBP-07-15, 66 N.R.C. at 271. If Entergy were to propose a new AMP in lieu of calculations demonstrating CUFen values less than unity, then NEC might amend NEC Contention 2 to challenge the AMP. Id.

The Board heard extensive oral testimony on Contentions 2A and 2B at the evidentiary hearing held on July 21 and 22, 2008. Entergy's testimony presented both the refined fatigue analyses for all of the components at issue and the Confirmatory CUFen Analysis for the FW nozzle. Testimony of James C. Fitzpatrick and Gary L. Stevens on NEC Contention 2A/2B – Environmentally Assisted Fatigue (May 12, 2008) at A25, A40. As Entergy witnesses testified, the Confirmatory CuFen Analysis of the FW nozzle used the same finite element model, thermal transient definitions, numbers of transient cycles, and water chemistry inputs as were used in the earlier refined fatigue analysis for that nozzle. Id. at A39. The Confirmatory CuFen Analysis differed only in that, when the thermal transient stress histories were determined, it computed 6-component stress histories via finite element analysis for each transient, whereas the refined fatigue analyses had used a simplified single stress component difference and subsequently used Green's Functions to obtain the stress time history for all of the transients (this approach was referred to by the Board as the "simplified Green's Function methodology"). Id.

At the hearing, NEC asserted a number of "errors" in Entergy's 2007 refined fatigue analyses and the 2008 Confirmatory CUFen Analysis including, among others, that Entergy used inappropriate heat transfer equations to calculate the thermal stress for each transient and that Entergy's calculation of the Fen parameters did not appropriately account for dissolved oxygen concentrations and resulting changes in water chemistry. In addition, NEC criticized the 2007 refined fatigue analyses because they used the simplified Green's Function methodology. See LBP-08-25 at 32.

After hearing extensive testimony on these issues, the Board found that NEC's claims were not meritorious and rejected all of them, except with respect to the use of the simplified Green's Function methodology. LBP-08-25 at 33-46. The Board determined that Entergy's Confirmatory CUFen Analysis for the FW nozzle "is satisfactory and complies with the regulatory requirements." Id. at 54. However, the Board found that Entergy's Confirmatory CUFen Analysis for the FW nozzle did not prove that the cumulative usage factor for the CS and RO nozzles projected to the end of the period of extended operation would "necessarily be below the regulatory requirement of unity." Id. at 55. The Board held that "Entergy must perform the metal fatigue analyses on the core spray and reactor recirculation nozzles (i.e., the CUFens) in compliance with the ASME Code requirements and without using the simplified Green's function methodology in order to satisfy the ASME Code requirements and 10 C.F.R. §§ 54.21(c)(1) and 54.29(a)." Id.

Consequently, the Board required Entergy to "either (1) properly recalculate[] the CS and RR outlet nozzle CUFens such that they demonstrate that these important components will not fail during the PEO (i.e., that the calculations produce a value less than unity), or (2) submit[] an AMP that demonstrates that aging of these components will be adequately managed during the

PEO." Id. at 66. The Board held that Entergy needed to "(1) recalculate the CUFen analyses for the CS and RR outlet nozzles, in accordance with the ASME Code, NUREG 6583 and 5704, and all other regulatory guidance, (2) resubmit these results to the NRC Staff and serve them on the other parties herein, and (3) either demonstrate that the [time limited aging analyses] are less than unity or submit an adequate AMP for these components." Id. at 67.

The Board ruled that, if Entergy performed confirmatory analyses of the CS and RO nozzles, and "[i]f the CUFen analyses are (1) done in accordance with the above stated guidance and the basic approach used in the Confirmatory CUFen Analysis for the FW nozzle, (2) contain no significantly different scientific or technical judgments, and (3) demonstrate values less than unity," the adjudicatory proceeding would terminate." Id. If the analyses failed to meet these criteria, then NEC could file new or amended contentions challenging the confirmatory analyses. Id. The Board further required that any new or amended contention "must specifically state how the new analyses are not consistent with the legal requirement and the calculations performed for the feedwater nozzle." Id. at 67 n.95. The Board cautioned NEC that this was not an opportunity to "rehash or renew technical challenges that have already been raised and resolved in this proceeding." Id. In a subsequent clarifying Order, the Board further advised NEC that any new contention would have to meet the requirements of 10 C.F.R. § 2.309(f)(1) (the standards for admissibility of contentions) and 2.309(f)(2) (good cause for new contentions). Order (Clarifying Deadline for Filing New or Amended Contentions) (Mar. 9, 2009) at 3.

Subsequently, Entergy performed confirmatory CUFen analyses of the CS and RO nozzles that used 6-component ASME stress evaluation methods in lieu of the simplified Green's Function methodology. On March 10, 2009, Entergy issued final confirmatory CUFen analyses of record for the CS and RO nozzles. The confirmatory analyses of the CS and RO nozzles

demonstrated that the CUFen values for both nozzles are significantly less than unity throughout the period of extended VY operation. Full Initial Decision at 3.

On April 24, 2009, NEC filed a motion for leave to file a new contention challenging the adequacy of the confirmatory analyses of the CS and RO nozzles. Entergy and the NRC Staff submitted responses in opposition to the motion. Id. at 4-7.[6]

In its Full Initial Decision, the Board rejected NEC's proposed new contention. The Board found that NEC had failed to satisfy the requirements specified in LBP-08-25 with respect to any new environmentally assisted fatigue contentions, and had also failed to satisfy the new contention pleading requirements of 10 C.F.R. § 2.309(f)(2)(i)-(iii). Id. at 8. The Board concluded that "NEC's challenges to the assumptions made by Entergy are, in essence, challenges that either were made previously and already rejected by the Board, or were not made before and are now not timely. The new contention is based on assumptions that cannot be considered information that was 'not previously available' or 'materially different than information previously available' and therefore does not meet the requirements of 10 C.F.R. § 2.309(f)(2)(i) or (ii)." Id. at 9. In response to the Board's denial of its proposed new contention, NEC then filed this Petition on July 23, 2009.

II. APPLICABLE LEGAL STANDARDS

A petition for Commission review of a Board decision is granted only at the discretion of the Commission, "giving due weight to the existence of a substantial question with respect to the following relevant considerations:" (i) a finding of material fact that is "clearly erroneous" or conflicts with a finding as to the same fact in a different proceeding; (ii) a necessary legal

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[6] Entergy's Opposition to NEC's Motion to File a Timely New Contention (May 18, 2009) ("Entergy's Opposition"); NRC Staff's Answer in Opposition to NEC Motion for Leave to File a New Contention (May 19, 2009) ("NRC Staff Answer").

conclusion that is "without governing precedent" or "contrary to established law;" (iii) the raising of a "substantial and important question of law, policy, or discretion;" (iv) the "conduct of the proceeding involved a prejudicial procedural error;" or (v) the raising of "any other consideration which the Commission may deem to be in the public interest." 10 C.F.R. § 2.341(b)(4); Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation), CLI-03-8, 58 N.R.C. 11, 17 (2003).

NEC does not cite 10 C.F.R. § 2.341(b)(4) or address the bases set forth in the regulation for granting discretionary review of a licensing board's decision. Entergy submits that NEC's failure to address the standards for review should be grounds in itself for dismissal of the Petition. In addition, the Commission should deny the Petition because, as set forth below, NEC has failed to identify any clear error of fact, error of law, procedural error, or abuse of discretion by the Board that would call for Commission review. Id.

III. THE MANNER IN WHICH THE BOARD CONDUCTED THE HEARING DOES NOT WARRANT COMMISSION REVIEW

NEC's first claim – that the Board conducted the hearing in a manner prejudicial to NEC's case (Petition at 12) – is unfounded and does not meet the standards for Commission review. NEC heaps abuse on the Board (see id. at 12-13), but does not provide a single citation to the record. Indeed, there is no way of telling from the Petition whether NEC is referring to the testimony on Contentions 2A and 2B or to testimony on the other Contentions, for which the opportunity for appeal has passed. In any event, an appellant is required to provide record citations (see 10 C.F.R. § 2.341(b)(2)(ii)), including precise portions of the record relied upon to support its assertion of error. Wisconsin Electric Power Co. (Point Beach Nuclear Station, Units 1 and 2), ALAB-739, 18 N.R.C. 335, 338 n.4 (1983). In addition, NEC provides no explanation of how the Board's conduct in the proceeding was prejudicial or affected the outcome of the

decision on Contentions 2A and 2B. NEC "bears the responsibility of clearly identifying the asserted errors in the decision on appeal and ensuring that is brief contains sufficient information and cogent argument to alert the other parties and Commission to the precise nature of and support for [its] claims." Advanced Medical Systems, Inc. (One Factory Row, Geneva, Ohio 44041), CLI-94-6, 39 N.R.C. 285 (1994), aff'd, Advanced Med. Sys., Inc. v. NRC, 61 F.3d 903 (6th Cir. 1985); Dominion Nuclear Connecticut, Inc. (Millstone Nuclear Power Station, Units 2 and 3), CLI-04-36, 60 N.R.C. 631, 639 & n.25 (2004).

Rather than providing specific citations to the record, NEC seeks to "incorporate by reference" the arguments made in NEC's Motion for Reconsideration of the Licensing Board's Partial Initial Decision (Dec. 17, 2008). Petition at 14. Generally referencing prior pleadings does not satisfy NEC's obligation to provide precise citations to the record and meaningful argument. Further, the Commission disfavors this practice. Millstone, CLI-04-36, 60 N.R.C at 641 n.40. Indeed, the Commission has specifically held that it will not "sift unaided through large swaths of earlier briefs filed before the Presiding Officer in order to piece together and discern the intervenors' particular concerns or the grounds for their claims." Hydro Resources, Inc., CLI-01-04, 53 N.R.C. 31, 46 (2001). Similarly, the Commission should not be expected to sift through four days of transcripts as NEC suggests (see Petition at 12) in order to piece together NEC's purported claims.

Moreover, NEC fails to show that "the conduct of the proceeding involved a prejudicial procedural error" warranting the granting of a petition for review under 10 C.F.R. § 2.341(b)(4)(iv). It is well established that the mere fact that a Board issues unfavorable rulings with respect to a party is not evidence of bias against that party. Northern Indiana Public Service Co. (Bailly Generating Station, Nuclear-1), ALAB-224, 8 A.E.C. 244, 246 (1974); Metropolitan

Edison Co. (Three Mile Island Nuclear Station, Unit 1), CLI-85-5, 21 N.R.C. 566, 569 (1985); Philadelphia Electric Co. (Limerick Generating Station, Units 1 and 2), ALAB-819, 22 N.R.C. 681, 721, 726 n.60 (1985); Pacific Gas & Electric Co. (Diablo Canyon Nuclear Power Plant, Units 1 & 2), ALAB-644, 13 N.R.C. 903, 923 (1981). In fact, the hearing transcript establishes that Dr. Hopenfeld was given ample opportunity to present his views.[7] Moreover, as a general matter, the Commission declines to interfere in the Board's case management absent an abuse of power. Entergy Nuclear Operations, Inc. (Indian Point, Units 2 and 3), CLI-08-7, 67 N.R.C. 187, 192 (2008). No such abuse occurred in this proceeding.

IV. NEC HAS IDENTIFIED NO ERRORS IN THE BOARD'S REJECTION OF NEC'S PROPOSED NEW FATIGUE CONTENTION THAT WARRANT COMMISSION REVIEW

NEC's claims regarding the Board's rejection of the proposed new fatigue contention propounded by NEC in April 2009 (see Petition at 14-19) should similarly be rejected because they are inadequately briefed and fail to demonstrate any error warranting review. For the most part, NEC simply repeats prior, generalized assertions or expresses general disagreement with the Board's results. "A mere recitation of an appellant's prior positions or a statement of his or her general disagreement with a decision's result 'is no substitute for a brief that identifies and explains the errors of the Licensing Board in the order below.'" Texas Utilities Electric Co. (Comanche Peak Steam Electric Station, Unit 2), CLI 93-10, 37 N.R.C. 192, 198 (1993) (footnote omitted). Again, Entergy submits that NEC's failure to clearly identify and support its claims is grounds by itself for denying the Petition.

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[7] Tr. 814-16, 831-33, 860-68, 876-77, 932-35, 941-43, 959-71, 973-86, 991-93, 998-1000, 1006-15, 1019-25, 1026-27, 1037-39, 1052-57, 1063-64, 1066-77, 1080-83, 1086-87, 1095-1104, 1106-10, 1125-36, 1140-41 (Hopenfeld). In fact, the record shows numerous instances in which the Board was solicitous of Dr. Hopenfeld's views. See, e.g., Tr. 814-15, 831-32, 860, 876, 959, 973, 998, 1018-19, 1026, 1036-37, 1066-67, 1086, 1097.

Notwithstanding NEC's failure to specify its claims, substantial deference should be given to the Boards' determination denying admission of NEC's proposed new fatigue contention. AmerGen Energy Co., L.L.C. (Oyster Creek Nuclear Generating Station), CLI-06-24, 64 N.R.C. 111, 121 (2006), citing Private Fuel Storage, L.L.C. (Independent Fuel Storage Installation), CLI-99-10, 49 N.R.C. 318, 324 (1999) and Long Island Lighting Co. (Shoreham Nuclear Power Station, Unit 1), ALAB-855, 24 N.R.C. 792, 795 (1986). Such decision should be affirmed where, as here, the appellant points to no error of law or abuse of discretion. Id.

Here, the requirements for an admissible new contention imposed by the Board in LBP-08-25, and the determination by the Board in its Full Initial Decision that NEC's proposed contention failed to satisfy those requirements, are grounded on a thorough understanding by the Board of the EAF issues, garnered through the extensive written and oral testimony submitted in the proceeding. Therefore, the Board's assessment that the proposed contention was inadmissible should be given particular deference by the Commission.

NEC appears to suggest that the Board's application of the requirements that it had set in LBP-08-25 on the admissibility of a proposed new fatigue contention to NEC's proposed contention abridged NEC's hearing rights. Petition at 18. However, the conditions set by the Board on the admissibility of a proposed new contention challenging the confirmatory fatigue analyses to be performed by Entergy for the core spray and the reactor recirculation nozzles were reasonable because issues of methodology (including the appropriateness of heat transfer coefficients and the dissolved oxygen in reactor water during plant transients, as shown later in this response) had already been extensively litigated and resolved in Entergy's favor. The Board therefore appropriately prohibited NEC from rehashing matters that had already been decided. Despite the Board's instructions, NEC's proposed contention and the supporting Declaration of

Dr. Hopenfeld were again concerned "primarily with" the appropriateness of the heat transfer coefficients and the dissolved oxygen level in the reactor water during plant transients. See Hopenfeld Declaration (Exh. A to NEC's Motion) ("Hopenfeld Decl.") at A5.

A. Conformance of Entergy's Calculations with the Board's Requirements Was Not Disputed

NEC appears to argue that its contention disputed the conformance of Entergy's confirmatory CUFen analyses for the CS and RO nozzles with the requirements set by the Board in LPB-08-25[8] (see Petition at 15-16), but its discussion is vague and unsupported. As the Board found, Dr. Hopenfeld conceded that Entergy's "methodology was the same." Full Initial Decision at 8, citing Hopenfeld Decl. at A6-A7. NEC does not challenge this finding. NEC also concedes that the scientific and technical judgments used in the confirmatory CUFen analyses for the CS and RO nozzles were the same as used in the Confirmatory CUFen Analysis for the FW nozzle, just as the Board had mandated. Petition at 15. NEC appears to argue (without any citations to the record) that the judgments should not have been the same (id. at 15-16). This argument obviously does not challenge Entergy's compliance with the Board's requirement. In any event, as discussed later, the only specific claims advanced by NEC were rejected by the Board as either rehashing old arguments or as untimely. See Full Initial Decision at 8-9.

NEC argues that Dr. Hopenfeld had "discusse[d] Entergy's failure to meet or conform with the ASME code or 'all other regulatory guidance' in specific terms in both his April 24, 2009 and May 26, 2009 Declarations." Petition at 15. However, NEC provides no support for

[8] As previously discussed, the Board requirements for the Confirmatory CUFen analyses for the CS and RO nozzles were that they be done in accordance with the basic approach used in the Confirmatory CUFen Analysis for the FW nozzle; recalculated in accordance with the ASME Code, NUREG 6583 and 5704, and all other regulatory guidance; contain no significantly different scientific or technical judgments; and demonstrate values less than unity. LBP-08-25 at 67. NEC could file a contention challenging the adequacy of those analyses, but such a contention "must specifically state how the new analyses are not consistent with the legal requirement and the calculations performed for the feedwater nozzle." Id. at 67 n.95.

this claim. In fact, the Hopenfeld Declaration neither asserted nor explained how the confirmatory CUFen analyses for the CS and RO nozzles failed to meet the ASME Code, NUREG 6583 and 5704, and other regulatory guidance.

Similarly, there is no support for NEC's claim that it challenged whether the Confirmatory CUFen Analyses for the CS and RO nozzles demonstrated values less than unity. It is indisputable that the CUFens calculated by Entergy for the CS and RO nozzles are considerably less than unity. NEC now argues, however, that in light of its challenges to Entergy's assumptions and compliance with standards, "any assertion that CUFens are less than unity cannot be validly supported by the analyses." Petition at 16. Yet, neither NEC nor Dr. Hopenfeld ever provided any information indicating that their claims would result in CUFens greater than unity. Further, since NEC does not challenge the validity of the computations, but only disagrees with the assumptions on which they are based, this objection does not raise an independent ground for Commission review.

Thus, there is no merit to, or support for, NEC's claim that its proposed contention challenged the compliance of Entergy's Confirmatory CUFen Analyses for the CS and RO nozzles with the requirements set by the Board in LBP-08-25. Rather, as discussed below, NEC impermissibly attempted in its proposed contention to rehash issues that had already been resolved against it.

B. NEC Sought to Rehash Old Arguments and Failed to Comply with 10 C.F.R. § 2.309(f)(2)

1. Rehashing of Old Arguments

As noted above, the Board had warned that NEC should not seek to "rehash" technical arguments that had been examined at the hearings and rejected. LBP-08-25 at 67 n.95. NEC's proposed contention did exactly what the Board had prohibited. Indeed, all of the claims raised

in the Hopenfeld Declaration had been specifically addressed and resolved against NEC in the hearing.

First, NEC argued in its contention that equations used by Entergy to calculate the heat transfer coefficient longitudinally along the CS and RO nozzles are valid only when the flow inside the pipe is fully developed. Hopenfeld Decl. at A9. That argument is identical to one Dr. Hopenfeld made at the hearing. See, e.g., Tr. at 1108-09 (Hopenfeld). Entergy's witnesses refuted the argument by explaining that, because of the high flow velocities in the nozzle, the "entrance effects" preventing the existence of fully developed flow are not present. Tr. at 1124-25 (Stevens).

Second, Dr. Hopenfeld's claim in support of the NEC's contention that it is inappropriate to use a single heat transfer coefficient for natural convection flow because the heat transfer coefficient varies circumferentially around the RO nozzle (Hopenfeld Decl. at A14) was also an assertion previously made by Dr. Hopenfeld in the hearing (see Tr. at 1108-09 (Hopenfeld)), refuted by Entergy's witnesses (Tr. 1111-13 (Stevens)), and rejected by the Board in its Partial Initial Decision (LBP-08-25 at 47-48).

Finally, NEC's dissolved oxygen claim was again a rehashing of NEC testimony at the hearing on what values of dissolved oxygen should be used in the analyses. The dissolved oxygen claim was refuted by Entergy witnesses, who explained the basis for the dissolved oxygen values that were used at the RO line and other reactor locations besides the feedwater line. The Board's Partial Initial Decision, citing this testimony, rejected NEC's argument and found that Entergy's selection of dissolved oxygen values "was reasonable and appropriate." LBP-08-25 at 38. NEC's contravention of the directive not to "rehash or renew any technical challenges that have already been raised and resolved in this proceeding" (LBP-08-25 at 67 n.95)

was even more striking because the Board had specifically cited "dissolved oxygen" as one of the issues that NEC was not to raise. Id.

2. Non-Timely Raising of New Technical Arguments

Besides rehashing issues already resolved, the heat transfer coefficient and dissolved oxygen claims in NEC's proposed contention also attempted to impermissibly challenge equations and inputs that were available in the earlier calculations and had not changed. See Entergy's Opposition at 25-27 (identifying precisely where in the prior calculations these topics were addressed). Because NEC had failed to raise these issues in a timely fashion, the Board properly ruled that NEC failed to meet the requirements for new contentions under 10 C.F.R. § 2.309(f)(2). Full Initial Decision at 9. The Board correctly ruled that NEC should have challenged these assumptions in the many opportunities it had after the analyses were issued in August 2007, and that raising such a challenge for the first time eighteen months later, in the proposed new contention, was inappropriate. Id.

NEC does not deny that the heat transfer and dissolved oxygen assumptions in the fatigue analyses for the CS and RO nozzles have remained unchanged since 2007. Rather, NEC claims that the 2007 refined analyses represented "discarded license renewal application amendments that were discarded long ago." Petition at 18. However, NEC Contention 2A challenging the 2007 refined analyses was the subject of extensive testimony at the hearing.[9] At the time it sought admission of what became Contention 2A, NEC did not object to the heat transfer assumptions for the CS and RO nozzles, nor did it raise those objections until April 2009, when it sought admission of its proposed new contention challenging the confirmatory CUFen analyses

[9] Contrary to NEC's characterization, the 2007 refined analyses were not "discarded" but were upheld by the Board in all respects except their reliance on the simplified Green's Function computational methodology. See LBP-08-25 at 48, 66; Full Initial Decision at 9.

for the two nozzles. Under these circumstances, the Board was amply justified in ruling that NEC had the opportunity to litigate these analyses and failed to do so.[10]

C. Failure to Meet the Contention Admissibility Requirements

The rejection of NEC's new contention was also appropriate because it failed to meet NRC standards for admissibility in 10 C.F.R. § 2.309(f)(1). While the Board, having determined that NEC's contention did not meet the requirements in LBP-08-25 or the standards in 10 C.F.R. § 2.309(f)(2), did not reach this issue, both Entergy and the NRC Staff demonstrated that NEC's contention failed to meet the Section 2.309(f)(1) standards. Entergy Opposition at 12-25; NRC Staff Answer at 5-10. In particular, as discussed below, NEC's proposed contention failed (1) to specify the issues to be controverted; (2) to show that these issues were material; (3) to provide requisite factual or expert support; and (4) to discuss and demonstrate a genuine dispute with the specific portions of Entergy's calculations that addressed NEC's claims. Since NEC's failure to meet the standards in Section 2.309(f)(1) was raised before the Board, the Commission may affirm the dismissal of NEC's contention on this ground as well. Private Fuel Storage, LLC (Independent Spent Fuel Storage Installation), CLI-05-1, 61 N.R.C. 160, 166 (2005) (the Commission may affirm a Board decision on any ground finding support in the record).

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[10] In a reply to Entergy's and the NRC Staff's answers opposing the new contention, NEC proffered another, 20 page Declaration from Dr. Hopenfeld, which Entergy moved to strike as going well beyond the scope of a permissible reply. New England Coalition Reply to NRC Staff and Entergy Oppositions to NEC's Motion to File a Timely New Contention (May 26, 2009); Entergy's Motion to Strike New England Coalition's Reply to NRC Staff and Entergy Oppositions to NEC's Motion to File a Timely New Contention (June 2, 2009). Because the Board rejected the new contention, it found it unnecessary to address Entergy's motion to strike. LBP-08-25 at 7 n.17. However, the Commission has squarely ruled that a reply to an answer may not be used to add new bases for or supplement an otherwise deficient contention. Louisiana Energy Services, L.P. (National Enrichment Facility) ("LES"), CLI-04-25, 60 N.R.C. 223, 225, aff'd, CLI-04-35, 60 N.R.C. 619, 623 (2004); Nuclear Management Co. (Palisades Nuclear Plant), CLI-06-17, 63 N.R.C. 727, 732 (2006). In Palisades, the Commission held that allowing new claims in a reply "would unfairly deprive other participants of an opportunity to rebut the new claims." Id. Consequently, new arguments or support for a contention "cannot be introduced in a reply brief, or any other time after the date the original contentions are due, unless the petitioner meets the late filing criteria set forth in 10 C.F.R. § 2.309(c), (f)(2)." Palisades, CLI-06-17, 63 N.R.C. at 732. Since NEC made no attempt to address the late-filing criteria, any new claims in Dr. Hopenfeld's second Declaration were also impermissible.

1. Specificity

NEC's proposed contention failed to provide the "specific statement of the issue of law or fact to be raised or controverted" as required by 10 C.F.R. § 2.309(f)(1)(i). NEC did not specify in its contention how the confirmatory calculations for the CS and RO nozzles are "technically and factually flawed" nor to what "ASME, NRC, or National Laboratory practice" they fail to conform, nor how they fail to meet "established engineering practice, or the rules of applied physics." See NEC's Motion at 2. Such vague contentions are not permissible under the Commission's rules of practice. Duke Energy Corp. (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 N.R.C. 328, 334, 338 (1999); Northeast Nuclear Energy Co. (Millstone Nuclear Power Station, Units 2 and 3), LBP-01-10, 53 N.R.C. 273, 279, 302 (2001).

2. Materiality

NEC's proposed contention likewise failed to show "that the issue raised in the contention is material to the findings the NRC must make to support the action that is involved in the proceeding," as required by 10 C.F.R. § 2.309(f)(1)(iv). An issue is only "material" if "the resolution of the dispute would make a difference in the outcome of the licensing proceeding." 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989). This means that there must be some link between the claimed error or omission regarding the proposed licensing action and the NRC's role in protecting public health and safety or the environment. Dominion Nuclear Connecticut, Inc. (Millstone Nuclear Power Station, Units 2 and 3), LBP-04-15, 60 N.R.C. 81, 89 (2004), aff'd, CLI-04-36, 60 N.R.C. 631 (2004).

NEC's proposed contention failed to satisfy 10 C.F.R. § 2.309(f)(1)(iv) because neither NEC nor Dr. Hopenfeld provided any demonstration that the issues that NEC raised were

material to the findings that the Board must make.[11] The Confirmatory CUFen Analysis of the RO nozzle[12] indicates that the 60-year CUFen for the safe end of the nozzle is 0.0360, and the 60-year CUFen for the nozzle blend radius is 0.111. Both values are far less than unity, and are therefore acceptable. Indeed, the calculated CUFen at the RO limiting location – the nozzle blend radius – would have to increase by almost an order of magnitude before the limit was exceeded. NEC provided no basis to justify that an order of magnitude increase in CUFen at the nozzle's limiting location would result if a new fatigue analysis of the RO nozzle was performed along the lines proposed in the contention.

3. Factual or Expert Opinion Support

NEC also failed to support its proposed contention with adequate facts or expert opinion, as required by 10 C.F.R. § 2.309(f)(1)(v). It is the obligation of the petitioner to present the factual information or expert opinions necessary to support its contention adequately. Yankee Atomic Electric Co. (Yankee Nuclear Power Station), CLI-96-7, 43 N.R.C. 235, 262 (1996). Failure to do so requires that the contention be rejected. Arizona Public Service Co. (Palo Verde Nuclear Generating Station, Units 1, 2, and 3), CLI-91-12, 34 N.R.C. 149, 155-56 (1991).

At the hearing, Dr. Hopenfeld admitted that he lacks expertise on the very issue that NEC raised in its proposed contention – CUF analytical computations. When the Board asked Dr. Hopenfeld whether he agreed with Entergy's methodology for performing stress analyses of reactor components, he admitted: "With respect to the specific numerical analysis, I am not an

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[11] All of the reasons discussed in this subsection as to why NEC's proposed contention lacked materiality under 10 C.F.R. § 2.309(f)(1)(iv) apply also to NEC's failure to demonstrate compliance with 10 C.F.R. § 2.309(f)(1)(vi), which requires that an admissible contention include sufficient information to show that a genuine dispute exists with the applicant/licensee on a material issue of law or fact.

[12] NEC's proposed contention focused only on the analysis of the RO nozzle. It did not challenge the confirmatory CUFen analyses for the CS nozzle and did not identify any factual issues being controverted with respect to that analysis, as would be required by 10 C.F.R. § 2.309(f)(1)(i). NEC did not provide any alleged facts or expert opinion regarding alleged deficiencies in the CS nozzle analysis, as required by 10 C.F.R. § 2.309(f)(1)(v).

expert in stress numerical analysis." Tr. at 831 (Hopenfeld). In fact, Dr. Hopenfeld did not claim to have ever performed a fatigue analysis of reactor components comparable to Entergy's analysis. The Board emphasized that proper performance of stress analysis computations requires "technical and scientific judgment, the construction of a complex finite element model, running 20 different kinds of transients through the model, and performing quality assurance." LBP-08-25 at 62-63, citing Tr. at 919-21 (Stevens). Because Dr. Hopenfeld admittedly lacked the expertise to perform these computations, he was not qualified to render an expert opinion in support of NEC's proposed contention that challenged Entergy's calculations.[13]

4. Genuine Dispute on a Material Issue of Law or Fact

NEC's proposed contention also failed to satisfy 10 C.F.R. § 2.309(f)(1)(vi), which requires a properly pled contention to "include references to specific portions of the application . . . that the petitioner disputes and the supporting reasons for each dispute, or, if the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the supporting reasons for the petitioner's belief." Thus, there must be a concrete and genuine dispute worth litigating. Making a "bald or conclusory allegation that such a dispute exists" is not sufficient, as a petitioner "must make a minimal showing that material facts are in dispute, thereby demonstrating that an 'inquiry in depth' is

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[13] Indeed, the Board flatly rejected Dr. Hopenfeld's "recalculation" of the CUFens for the VY reactor components:

> The Board finds that Dr. Hopenfeld's CUFen recalculations are unsound. The recalculations use ASME default values for the CUF calculation, despite the fact that actual values and conditions are known and available. The recalculations inappropriately use an isolated portion of the NUREG/CR-6909 approach, without applying the other necessary components of that NUREG. And the recalculations use the worst-case Fen values from NUREG/CR-6909 without valid justification. As was elicited in testimony during the hearing, Dr. Hopenfeld's recalculations predict that the regulatory requirement (i.e., unity) would have been exceeded within 4.63 years after the VYNPS commenced operations, and it is obvious to the Board that this did not occur. Tr. at 1129-30.

LBP-08-25 at 56-57.

appropriate." 54 Fed. Reg. at 33,171 (quoting Connecticut Bankers Ass'n v. Bd. of Governors, 627 F.2d 245, 251 (D.C. Cir. 1980)).

NEC's proposed contention failed to meet the standards in 10 C.F.R. § 2.309(f)(1)(vi). First, as discussed above with respect to 10 C.F.R. § 2.309(f)(1)(iv), NEC did not demonstrate that any of its allegations were material. Moreover, NEC failed to reference the specific portions of Entergy's confirmatory CUFen analyses that it disputed, and failed to indicate the supporting reasons for each dispute. NEC also ignored the portions of the confirmatory calculations that addressed NEC's allegations.

For example, in his Declaration in support of the new contention, Dr. Hopenfeld sought to distinguish the RO nozzle as involving flow out of the reactor vessel, as opposed to the FW nozzle where the flow is inward. Hopenfeld Decl. at A10. However, Entergy explicitly took into account the difference in flow direction in both the 2007 refined fatigue analysis and the Confirmatory CUFen Analysis of the RO nozzle, and NEC neither addressed nor challenged this information in the calculations. See Entergy's Opposition at 22-23.

Dr. Hopenfeld's claim that the heat transfer coefficient for natural convection flow varies circumferentially around the RO nozzle (Hopenfeld Decl. at A14 (emphasis added)) similarly ignored relevant information in Entergy's calculations. Among other things, Entergy's calculations showed that circumferential variations in heat transfer coefficient during the convection mode would have a negligible effect on the overall heat transfer coefficient. Dr. Hopenfeld ignored the portion of the Entergy calculations showing that, for natural convection, the heat transfer coefficient is much lower than that for forced flow, so that the contribution of heat transfer to fatigue is much smaller than for forced flow (one order of magnitude, compared to full flow conditions for the significant transients). See id. at 23-24.

Similarly, the dissolved oxygen levels in the recirculation line that were used in the RO nozzle calculations were identified in both the refined fatigue analyses and the Confirmatory CUFen Analysis for the RO nozzle. NEC did not address those calculations. See id. at 24.

In short, not only were NEC's claims in its proposed contention lacking in materiality, but they did not controvert – or even refer to – the portions of the confirmatory CUFen analysis for the RO nozzle that address the issues that NEC sought to raise. NEC's proposed contention failed to establish the existence of a dispute on a material issue of fact involving VY's license renewal application, contrary to the requirements set forth in 10 C.F.R. § 2.309(f)(1)(vi).

For all of these reasons, the Board did not commit any error or abuse of discretion in refusing to admit NEC's proposed contention. Since NEC has not demonstrated any clear error, a review by the Commission of this aspect of the Board's Full Initial Decision is not warranted.

V. NEC ERRONEOUSLY ALLEGES THAT THE BOARD ENLARGED THE SCOPE OF THE EVIDENTIARY HEARING

As indicated earlier, in the "Background" section of its Petition, NEC complains that, after the parties had filed statements of position on Contentions 2A and 2B in advance of the evidentiary hearing, they were advised by the Board in a Scheduling Conference on June 24, 2008 "that all aspects of Contention 2 and it's [sic] a and B subsets were likely to be probed at the oral hearings scheduled less than 4 weeks away." Petition at 9. NEC goes on to charge that, at the hearings "held in Newfane, Vermont on July 21, 22, 23, 24, 2008, nonetheless, [the Board] address[ed] all three aspects of Contention 2; and defeating [sic] at the onset through this arbitrary and capricious put-and-take of scope, NRC's stated basic goal of fairness." Id. at 10. NEC's argument that the Board unfairly required it to litigate Contention 2 at the hearing is simply wrong.

Contention 2 was not addressed in the written or the oral testimony by the witnesses for any of the parties,[14] the questions by the Board at the hearing, or in the Board's findings of fact in LBP-08-25. All evidence offered in the proceeding was focused on Entergy's refined and confirmatory environmentally assisted fatigue analyses which were the subjects of Contentions 2A and 2B. Indeed, NEC provides no citation to testimony, evidentiary record transcript, or Board findings that relate to Contention 2. To the contrary, LBP-08-25 clearly states: "This partial initial decision does not deal with the original Contention 2" (LBP-08-25 at 13); "[c]ontention 2 will be held in abeyance" (id. at 2); and "[t]his partial initial decision resolves Contentions 2A and 2B in favor of the intervenors, NEC and the Vermont Department of Public Services, leaves Contention 2 open and in abeyance . . ." (id. at 153).

The Board's Partial Initial Decision further stated that NEC would have an opportunity to revitalize dormant Contention 2 if Entergy chose to proceed with a new AMP rather than submitting Confirmatory CUFen Analyses for the RO and CS nozzles. LBP-08-25 at 67. Because Entergy chose to provide these additional Confirmatory analyses, Contention 2 became moot. NEC's claim that the Board improperly included Contention 2 within the scope of the hearing has no factual basis and provides no grounds for the Commission to grant NEC's Petition.[15]

VI. CONCLUSION

NEC has failed to raise any issues that would warrant that the Commission's exercise of its discretion to review the Board's actions and rulings in this proceeding. Accordingly, NEC's

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[14] See LBP-08-25 at 6 nn.15-17 (showing that all prefiled testimony on environmentally assisted fatigue issue related to Contentions 2A/2B).

[15] Even if the Board had erroneously expanded the scope of the hearing to encompass Contention 2 (which it did not), the fact that the Board's Partial Initial Decision did not address that contention and instead required Entergy to submit confirmatory fatigue calculations for the CS RO nozzles rather than rely on an AMP would make the alleged error harmless and would not provide a basis for Commission review.

Petition should be denied. In addition, since no legal challenges remain to the approval of the VY license renewal Application,[16] Entergy respectfully submits that the Commission should direct the Staff to issue promptly the renewed operating license for the plant.

Respectfully submitted,

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Dated: August 3, 2009

[16] Pending before the Commission is the NRC Staff's petition for review of the portion of the Board's Partial Initial Decision that required Entergy to submit further calculations for the CS and RO nozzles. NRC Staff's Petition for Review of the Licensing Board's Partial Initial Decision, LBP-08-25 (Dec. 9, 2008). The Commission has placed the Staff's petition for review in abeyance until further order by the Commission. Order (Jan. 16, 2009). Whatever disposition the Commission gives to the Staff's petition will not affect final approval of the license renewal application, since the Board proceeding has now been completed and the Board's favorable decision clears the way for such approval.

Likewise, the recent Commission Decision, CLI-09-10, 69 N.R.C. __ (June 4, 2009) ("CLI-09-10"), denying the Commonwealth of Massachusetts's petition for review of the Partial Initial Decisions issued by Atomic Safety and Licensing Boards in the Pilgrim and Vermont Yankee license renewal proceedings allows the Commission to move forward with the issuance of the renewed licenses. The Commission made it clear that should the Commonwealth succeed in judicial challenges to the prior Commission rulings upholding the dismissal of a contention the Commonwealth had submitted in both proceedings, the Commission "will respond accordingly, including taking any steps in the Pilgrim and Vermont Yankee license renewal proceedings called for to assure that the judicial review results are implemented in a 'meaningful' way." CLI-09-10 at 10. Thus, there is no pending action on the Commonwealth's review petition that would affect the renewal of the VY license.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

In the Matter of	)	
	)	
Entergy Nuclear Vermont Yankee, LLC	)	Docket No. 50-271-LR
and Entergy Nuclear Operations, Inc.	)	ASLBP No. 06-849-03-LR
	)	
(Vermont Yankee Nuclear Power Station)	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of "Entergy's Response In Opposition To New England Coalition's Petition for Review of LBP-09-09" dated August 3, 2009, were served on the persons listed below by deposit in the U.S. Mail, first class, postage prepaid, and where indicated by an asterisk by electronic mail, this 3rd day of August, 2009.

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