LBP-08-12

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

DOCKETED 07/24/08

ATOMIC SAFETY AND LICENSING BOARD

SERVED 07/24/08

Before Administrative Judges:

E. Roy Hawkens, Chairman
Dr. Paul B. Abramson
Dr. Anthony J. Baratta

In the Matter of	Docket No. 50-0219-LR
AMERGEN ENERGY COMPANY, LLC	ASLBP No. 06-844-01-LR
(License Renewal for Oyster Creek Nuclear Generating Station)	July 24, 2008

MEMORANDUM AND ORDER
(Denying Citizens' Motion to Reopen the Record and to Add a New Contention)

On April 18, 2008, the intervenors in this case – six organizations hereinafter referred to collectively (per their suggestion) as Citizens[1] – filed a motion seeking to reopen the record and to add a new contention challenging the license renewal application submitted by AmerGen Energy Company, LLC ("AmerGen") for the Oyster Creek Nuclear Generating Station ("Oyster Creek"). On May 27, 2008, while their April 18 motion remained pending, Citizens filed another motion seeking to supplement the basis of the contention proffered in their April 18 motion. Given the procedural posture of this case, if Citizens' May 27 motion is to be granted, it must – like the April 18 motion – satisfy the regulatory requirements for reopening the record.

Reopening the record is an extraordinary action. A licensing board may grant a motion to reopen only if the demanding requirements in 10 C.F.R. § 2.326 are satisfied. We conclude

[1] The six organizations are Nuclear Information and Resource Service; Jersey Shore Nuclear Watch, Inc.; Grandmothers, Mothers And More for Energy Safety; New Jersey Public Interest Research Group; New Jersey Sierra Club; and New Jersey Environmental Federation.

that Citizens' April 18 and May 27 motions fail to satisfy the regulatory requirements for reopening the record. We therefore deny their motions to reopen.

I. BACKGROUND

On July 22, 2005, AmerGen submitted a license renewal application for Oyster Creek seeking a twenty-year extension for the current license, which expires on April 9, 2009. Citizens challenged the application, and this Board admitted a single contention challenging the frequency of AmerGen's proposed plan to perform ultrasonic tests in the sand bed region of the drywell shell. In September 2007, we held a two-day evidentiary hearing on the admitted contention. At the end of the hearing, we closed the record. See Tr. at 878 (Sept. 25, 2007).

On December 18, 2007, this Board issued an initial decision resolving Citizens' contention in AmerGen's favor (AmerGen Energy Co., LLC (Oyster Creek Nuclear Generating Station), LBP-07-17, 66 NRC 327 (2007)). On January 14, 2008, Citizens filed an appeal with the Commission challenging our decision. That appeal remains pending.

On April 3, 2008, the NRC Staff informed the Commission that it was reviewing an analytic approach, called the "Green's function" method, which historically has been used by licensees to calculate cumulative usage factors ("CUF") related to metal fatigue, and which may not be sufficiently conservative in some instances. See Board Notification 2008-01, Notification of Information in the Matter of Oyster Creek Nuclear Generating Station License Renewal Application (Apr. 3, 2008) [hereinafter April 3 Commission Notification]. The Staff advised the Commission that the CUF for Oyster Creek's recirculation nozzle had been calculated using the Green's function method (ibid.). The Staff further indicated that, incident to its review of AmerGen's license renewal application, it would direct AmerGen to "perform a confirmatory analysis consistent with the methodology in Section III of the ASME Code" (ibid.; infra note 3). The Staff told the Commission that the "safety significance of using the [Green's function] is low based on the risk assessments performed by the Staff," but the Staff nevertheless provided the

Commission with this information "because this may be an issue of public interest" (April 3 Commission Notification).[2]

Shortly thereafter, on April 11, 2008, the NRC Staff issued a draft Regulatory Issue Summary ("RIS") addressed to all reactor plant licensees informing them that use of the Green's function methodology "could be nonconservative if not correctly applied" (NRC [RIS] 2008-xx, "Fatigue Analysis of Nuclear Power Plant Components" at 1 (Apr. 11, 2008) [hereinafter April 11 RIS]) (published in Proposed Generic Communication; Fatigue Analysis of Nuclear Power Plant Components, 73 Fed. Reg. 24,094 (May 1, 2008)). According to the RIS:

> The Green's function approach involves performing a detailed stress analysis of a component to calculate its response to a step change in temperature. This detailed analysis is used to establish an influence function, which is subsequently used to calculate the stresses caused by the actual plant temperature transients. This methodology has been used to perform fatigue calculations and as input for on-line fatigue monitoring programs.

April 11 RIS at 2. The RIS states that the "Green's function methodology is not in question" (ibid.). Rather, the concern animating issuance of the RIS relates to use of a "simplified input for applying the Green's function in which only one value of stress is used for the evaluation of the actual plant transients" (ibid.). This simplified analytic methodology "may provide acceptable results for some applications; however, it also requires a great deal of judgment by the analyst to ensure that the simplification still provides a conservative result" (ibid.). Accordingly, states the RIS, recent license renewal applicants who have used the simplified Green's function methodology have been asked by the NRC Staff to "perform confirmatory analyses to demonstrate that the simplified Green's function analyses provide acceptable results" (ibid.).[3]

---

[2] The application of the Green's function to determine the CUF of the Oyster Creek's recirculation nozzle is not relevant to the issue resolved by this Board in LBP-07-17 and that is pending before the Commission on appeal (April 3 Commission Notification).

[3] Consistent with the NRC Staff's representation to the Commission (April 3 Commission Notification), the Staff on April 29, 2008 issued to AmerGen a request for additional (continued...)

On April 18, 2008, Citizens filed a motion with the Commission seeking to reopen the record in the Oyster Creek case and to file a new contention. See Motion by [Citizens] to Reopen the Record and for Leave to File a New Contention, and Petition to Add a New Contention (Apr. 18, 2008) [hereinafter Citizens' Motion to Reopen]. Citizens argued that the Commission should admit the following new contention:

> The predictions of metal fatigue for the recirculation nozzles at Oyster Creek are not conservative. A confirmatory analysis using a conservative method is required to establish whether these nozzles could exceed allowable metal fatigue limits during any extended period of reactor operation.

Reply by [Citizens] to AmerGen's Opposition to Their Petition to Add a New Contention at 3 (May 5, 2008) [hereinafter Citizens' May 5 Reply to AmerGen].[4] Citizens argued that their newly proffered contention: (1) satisfied the standards in 10 C.F.R. § 2.326 for reopening the record; (2) satisfied the standards in 10 C.F.R. § 2.309(f)(2) for timeliness; and (3) satisfied the standards in 10 C.F.R. § 2.309(f)(1) for contention admissibility. See Citizens' Motion to Reopen at 5-18.

On April 28, 2008, AmerGen and the NRC Staff filed answers opposing Citizens' motion to reopen the record. They argued that Citizens: (1) failed to satisfy the reopening standards in section 2.326; (2) failed to satisfy the timeliness standards in section 2.309(f)(2) for newly proffered contentions; and (3) failed to satisfy the contention admissibility standards in section

---

[3](...continued)
information regarding the fatigue analysis performed on the Oyster Creek recirculation outlet nozzle. In particular, the Staff directed AmerGen to perform a re-analysis of the CUF to confirm the result of the Green's function evaluation. See NRC Request for Additional Information Related to Oyster Creek Generating Station License Renewal Application (Apr. 29, 2008). As discussed infra in text, AmerGen complied with the Staff's request and provided the result of the re-analysis on May 1, 2008.

[4] Although Citizens originally submitted a more expansive contention consisting of three discrete challenges (Citizens' Motion to Reopen at 12), the affidavits accompanying the Answers submitted by AmerGen and the NRC Staff established that two of those challenges were insubstantial (Citizens' May 5 Reply to AmerGen at 3). Citizens therefore revised their newly proffered contention as indicated above in text.

2.309(f)(1). See AmerGen's Answer Opposing Citizens' Motion to Reopen Record and Petition to Add a New Contention at 7-30 (Apr. 28, 2008) [hereinafter AmerGen's April 28 Answer]; NRC Staff's Response in Opposition to Citizens' Motion to Reopen the Record and for Leave to File and Add a New Contention at 6-23 (Apr. 28, 2008) [hereinafter NRC Staff's April 28 Answer].[5]

By order dated May 9, 2008, the Commission referred to this Board for appropriate action Citizens' April 18 motion to reopen the record, the answers to that motion filed by AmerGen and the NRC Staff, and Citizens' replies and motion for leave to file a reply. See Commission Order, AmerGen Energy Co., LLC (License Renewal for Oyster Creek), Docket No. 50-219-LR (May 9, 2008) (unpublished).

Meanwhile, on May 1, 2008, AmerGen responded to the NRC Staff's April 29 request for additional information ("RAI") regarding the need to perform a re-analysis of the CUF for the recirculation outlet nozzle to confirm the result of the original evaluation that used a Green's function. See supra note 3; Letter from Alex S. Polonsky to Dale E. Klein dated May 5, 2008 Notifying Commission of AmerGen's Filing Enclosed RAI Responses on Metal Fatigue Analysis (May 1, 2008) [hereinafter AmerGen May 5 Letter]. In its RAI response, AmerGen informed the Staff that it had performed a confirmatory fatigue analysis of the Oyster Creek recirculation nozzle in accordance with the methodology in Section III of the ASME Code. See Enclosure to AmerGen May 5 Letter, RAI Response at 2. AmerGen's response included a Table containing

---

[5] On May 5, 2008, Citizens replied to AmerGen's April 28 answer, see Reply by [Citizens] to AmerGen's Opposition to their Petition to Add a New Contention (May 5, 2008), and on May 6, 2008, Citizens moved for leave to reply to the NRC Staff's opposition to Citizens' request to reopen the record. See Motion for Leave to File a Reply to the NRC Staff's Opposition to Citizens' Motion to Reopen (May 6, 2008). Citizens included with their latter filing a reply to the NRC Staff. See Reply by [Citizens] to the NRC Staff's Opposition to their Motion to Reopen (May 6, 2008) [hereinafter Citizens' May 6 Reply]. The NRC Staff filed a pleading opposing Citizens' request to reply. See NRC Staff's Response in Opposition to Citizens' Motion for Leave to File a Reply to the NRC Staff's Opposition to Citizens' Motion to Reopen (May 15, 2008) [hereinafter NRC Staff's Opposition to Citizens' Request to Reply]. In the interest of ensuring our decision is based on a full record, we grant Citizens' motion to file a reply. See 10 C.F.R. § 2.323(c).

information from the original analysis, a Table containing information from the new analysis, notes describing how the two analyses differed, and a summary of fatigue usage results comparing the cumulative usage factor results from the two analyses. See id. at 2-7. AmerGen reported that the "new analysis confirms that the results of the original analysis are conservative and remain acceptable" (id. at 4). AmerGen provided the Commission, this Board, and the parties to this proceeding with a copy of the May 1 RAI response under cover of a May 5, 2008 letter. See AmerGen May 5 Letter.

On May 21, 2008, this Board issued an order that (1) took note of the May 1 RAI response enclosed in AmerGen's May 5 letter, and (2) observed that AmerGen had failed to explain to this Board the relevance of the RAI response to this proceeding. See Order, AmerGen Energy Co., LLC (Oyster Creek Nuclear Generating Station), ASLBP No. 06-844-01-LR (May 21, 2008) (unpublished) [hereinafter May 21 Board Order]. This Board directed the parties to submit by May 27 "an affidavit authored by an appropriate expert that discusses with particularity the significance of [AmerGen's May 1 RAI response], accompanied by a pleading that explains the impact (if any) of that Response on the proper disposition of Citizens' motion to reopen the record and add a new contention" (id. at 2).

In compliance with the Board's May 21 order, AmerGen and the NRC Staff each filed a pleading accompanied by an affidavit stating that AmerGen's RAI response confirms that Citizens cannot satisfy the standards for reopening the record, that Citizens' newly proffered contention is untimely and does not satisfy the standards for admitting a late-filed contention, and that Citizens' contention fails to satisfy the standards for contention admissibility. See AmerGen's Response to May 21 Board Order (May 27, 2008); NRC Staff's Explanatory Pleading and Affidavit (May 27, 2008).

Citizens likewise filed a pleading accompanied by an affidavit in compliance with this Board's May 21 order. Citizens argued that this Board ought not consider AmerGen's RAI

response, because (1) AmerGen failed ab initio to present that material to the Board in the form of a proper pleading, and (2) it would be fundamentally unfair to consider AmerGen's RAI response without providing Citizens with an opportunity to respond after being given access to the data underlying the fatigue analyses and any documents that were referenced by those analyses to support their assumptions. See Citizens' Response to Board Order and Motion to Supplement the Basis of Their Contention at 2-4 (May 27, 2008) [hereinafter Citizens' May 27 Response and Motion to Supplement]. Citizens stated that even if this Board considers the RAI response without the benefit of an additional response from Citizens, we should conclude that the response fails to undermine their motion to reopen the record and to add a new contention (id. at 5-7). Finally, Citizens moved to supplement the basis of their newly proffered contention, arguing that the RAI response demonstrates the original fatigue calculation was not adequately conservative. This new basis, argued Citizens, confirms the need to reopen the record and to add a new contention. See id. at 7-10.

On June 5 and June 6, 2008, respectively, the NRC Staff and AmerGen filed responses opposing Citizens' motion to supplement the basis of their newly proffered contention. See NRC Staff's Answer to Citizens' Motion to Supplement the Basis of Their Contention (June 5, 2006) [hereinafter NRC Staff's Answer to Motion to Supplement]; AmerGen's Answer Opposing Citizens' Motion to Supplement (June 6, 2008) [hereinafter AmerGen's Answer to Motion to Supplement].[6]

---

[6] On June 5, 2008, Citizens filed a motion asking this Board to strike the May 27 pleadings of AmerGen and the NRC Staff, arguing that the pleadings exceeded the scope of this Board's May 21 order. See Citizens' Motion to Strike and for Other Appropriate Relief (June 5, 2008) [hereinafter Citizens' Motion to Strike]. AmerGen and the NRC Staff oppose Citizens' motion. See AmerGen's Answer Opposing Citizens' Motion to Strike (June 16, 2008) [hereinafter AmerGen's June 16 Answer]; NRC Staff's Answer to Citizens' Motion to Strike NRC Staff Response to the May 21 Board Order (June 16, 2008) [hereinafter NRC Staff's June 16 Answer]. For the reasons discussed infra note 21, we deny Citizens' motion to strike.

II. ANALYSIS

A. The Legal Standards In 10 C.F.R. § 2.326 Governing Motions To Reopen The Record Are, By Design, Strict And Demanding

Citizens' April 18 motion, which seeks to reopen the record and to admit a newly proffered contention,[7] and their May 27 motion, which seeks to supplement the basis of their newly proffered contention,[8] must – if they are to be granted – satisfy the requirements for reopening the record. See Metro. Edison Co. (Three Mile Island Nuclear Station, Unit 2), ALAB-486, 8 NRC 9, 22 (1978) (the requirements for reopening the record apply to "each issue to be reopened").

Reopening the record is an "'extraordinary action'" (51 Fed. Reg. 19,535, 19,538 (May 30, 1986)). The standards for reopening are strict and demanding. Otherwise, "'there would be little hope' of completing administrative proceedings if each newly arising allegation required an agency to reopen its hearings" (Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation), CLI-05-12, 61 NRC 345, 350 n.18 (2005) (quoting Vt. Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519, 555 (1978)). Proponents of motions seeking to reopen the record therefore bear a "heavy burden" (Pacific Gas & Elec. Co. (Diablo Canyon Nuclear Power Plant, Units 1 & 2), ALAB-756, 18 NRC 1340, 1344 (1983) (quoting Kan. Gas & Elec. Co. (Wolf Creek Generating Station, Unit No. 1), ALAB-462, 7 NRC 320, 338 (1978)).

---

[7] Citizens' April 18 motion to reopen seeks to admit the following new contention: "The predictions for metal fatigue for the recirculation nozzles at Oyster Creek are not conservative. A confirmatory analysis is required to establish whether these nozzles could exceed allowable metal fatigue limits during any extended period of reactor operation" (Citizens' May 5 Reply to AmerGen at 3).

[8] Citizens' May 27 motion seeks to supplement the basis of their newly proffered contention by arguing that AmerGen's May 1 RAI response confirms that the metal fatigue predictions are "non-conservative in some respects and non-compliant with the ASME code" (Citizens' May 27 Response and Motion to Supplement at 9).

They must satisfy a multi-factor test (10 C.F.R. §§ 2.326(a) and 2.326(d)) that is governed by prescribed evidentiary requirements (id. § 2.326(b)).

"A motion to reopen a closed record to consider additional evidence will not be granted unless the following criteria are satisfied" (10 C.F.R. § 2.326(a)):

> (1) The motion must be timely. However, an exceptionally grave issue may be considered in the discretion of the presiding officer even if untimely presented;
>
> (2) The motion must address a significant safety or environmental issue; and
>
> (3) The motion must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially.

Ibid.

Additionally, where – as here – a motion to reopen the record seeks to admit a new contention that has not previously been in controversy among the parties, section 2.326(d) requires the movant to show that a balancing of the following factors (to the extent they are relevant to the particular filing) weighs in favor of reopening:

> (i) Good cause, if any, for the failure to file on time;
>
> (ii) The nature of the . . . petitioner's right . . . to be made a party of the proceeding;
>
> (iii) The nature and extent of the . . . petitioner's property, financial or other interest in the proceeding;
>
> (iv) The possible effect of any order that may be entered in the proceeding on the . . . petitioner's interest;
>
> (v) The availability of other means whereby the . . . petitioner's interest will be protected;
>
> (vi) The extent to which the . . . petitioner's interests will be represented by existing parties;
>
> (vii) The extent to which the . . . petitioner's participation will broaden the issues or delay the proceeding; and
>
> (viii) The extent to which the . . . petitioner's participation may reasonably be expected to assist in developing a sound record.

10 C.F.R. § 2.309(c)(1).

Section 2.326(b) demands particularized support for motions that seek to reopen the record. See Private Fuel Storage, L.L.C., CLI-05-12, 61 NRC at 350 ("a party seeking to reopen a closed record to raise a new matter faces an elevated burden to lay a proper foundation for its claim"). Such motions must be accompanied by "affidavits that set forth the factual and/or technical bases for the movant's claim that the criteria [in section 2.326(a)] have been satisfied" (10 C.F.R. § 2.326(b)). Moreover, section 2.326(b) requires that "[e]vidence contained in affidavits must meet the [regulatory] admissibility standards" (ibid.) – that is, it must be "relevant, material, and reliable" (id. § 2.337(a)). In evaluating a motion to reopen the record, a licensing board properly evaluates the evidentiary material submitted by the parties. See Private Fuel Storage, L.L.C., CLI-05-12, 61 NRC at 350 (a licensing board properly considers the movant's "new allegations and [the non-movant's] contrary evidence in determining whether there was a real issue at stake warranting a reopened hearing"); Pub. Serv. Co. of N.H. (Seabrook Station, Units 1 & 2), CLI-90-10, 32 NRC 218, 222 (1990) (Commission weighed the competing evidence in concluding that a "motion to reopen [did] not present a question of safety significance").

As shown below, we find that Citizens' motions of April 18 and May 27 must be denied, because they fail to provide the evidentiary support required by 10 C.F.R. § 2.326(b) to satisfy the demanding standards in 10 C.F.R. §§ 2.326(a)(2) and 2.326(a)(3).[9]

---

[9] When considering a motion to reopen the record, a licensing board need not formally reopen the record in order to assess the relative worth of the parties' competing evidence. See Vt. Yankee Nuclear Power Corp. (Vermont Yankee Nuclear Station), ALAB-138, 6 AEC 520, 523 (1973) (In denying a motion to reopen the record, the tribunal will necessarily have supplemented the record with, for example, the "affidavits, letters or other materials accompanying the motion and the responses thereto. The 'hearing record,' however, has not been reopened.").

B. Citizens' April 18 Motion Fails To Satisfy The Stringent Requirements In 10 C.F.R. §§ 2.326(a)(2) And 2.326(a)(3) For Reopening The Record

1. Citizens' April 18 Motion to Reopen Fails to Demonstrate that the Newly Proffered Contention Raises a Significant Safety Issue, 10 C.F.R. § 2.326(a)(2)

(a) A movant who seeks to reopen the record must, inter alia, proffer a contention that raises a "significant safety . . . issue" (10 C.F.R. § 2.326(a)(2)). See also Pub. Serv. Co. of N.H. (Seabrook Station, Units 1 & 2), ALAB-940, 32 NRC 225, 243 (1990); Phila. Elec. Co. (Limerick Generating Station, Units 1 & 2), ALAB-834, 23 NRC 263, 264 (1986). A movant's assertion that a new contention presents a significant safety issue must be supported by affidavits that "set forth the factual and/or technical bases for the movant's claim that the criteria of paragraph (a) of this section have been satisfied" (10 C.F.R. § 2.326(b)). "Affidavits must be given by competent individuals with knowledge of the facts alleged, or by experts in the disciplines appropriate to the issues raised" (ibid.).[10]

Here, for Citizens to satisfy the requirement in section 2.326(a)(2), their affidavit must provide sufficient information to support a prima facie showing that (1) a deficiency exists in the

---

[10] The Dissent relies on Vt. Yankee Nuclear Power Corp. (Vermont Yankee Nuclear Station), ALAB-124, 6 AEC 358, 364 (1973), for the proposition that a movant seeking to reopen the record "need not present additional affidavits to restate what information the Staff has found self-evident" regarding a significant safety issue (Dissenting Opinion at n.6) (emphasis in original). As a matter of law, we believe the Dissent's view is tenuous in light of the 1986 regulatory amendment that mandates the submission of "affidavits that set forth the factual and/or technical bases for the movant's claim" that the reopening criteria have been satisfied (10 C.F.R. § 2.326(b)). Accord 51 Fed. Reg. at 19,535 (regulatory history states that "the Commission is requiring that motions to reopen be accompanied by affidavits setting forth with particularity the bases for the movant's claim"). In any event, the Dissent's view on this matter is not relevant, because nothing in this record, and nothing discussed in the Dissenting Opinion, shows that the putative non-conservative CUF for the Oyster Creek recirculation nozzle presents a significant safety issue.

We have reviewed the education, experience, and qualifications of the individuals offering "expert" opinions on behalf of the litigants, and we conclude these individuals qualify as experts for purposes of this proceeding. See Pub. Serv. Co. of N.H. (Seabrook Station, Units 1 & 2), ALAB-915, 29 NRC 427, 431-32 (1989); see also Duke Energy Corp. (Catawba Nuclear Station, Units 1 & 2), 60 NRC 21, 27-28 & n.14 (2004).

license renewal application, and (2) the deficiency presents a significant safety issue.[11] We conclude that Citizens' April 18 motion fails on both scores.

Regarding the putative deficiency of the original CUF analysis in the license renewal application, Citizens' expert, Dr. Hopenfeld, opines that "I expect that the simplified method has under-estimated the CUF of the recirculation nozzle at Oyster Creek" (Citizens' Motion to Reopen, Declaration of Dr. Joram Hopenfeld ¶ 7 (Apr. 15, 2008) [hereinafter Hopenfeld Decl.]). But Dr. Hopenfeld's "expect[ation]" that the original CUF is under-estimated is fairly characterized as speculation. The record establishes (and Citizens do not dispute) that the Green's function methodology – which was used to perform the original CUF analysis at Oyster Creek – "is not in question" (April 11 RIS at 2). Rather, the NRC Staff determined that the use of simplified input in the Green's function methodology *could*, if not correctly applied, result in a calculated CUF that is non-conservative (id. at 1). The NRC Staff therefore quite sensibly directed AmerGen to recalculate the recirculation nozzle CUF to confirm that the original calculation was adequately conservative. That the Staff has taken what appear to be prudent steps to confirm that AmerGen has conducted an adequate time limited aging analysis for the Oyster Creek recirculation nozzle does not of itself establish the existence of a deficiency in the license renewal application that warrants reopening the record. Rather, this supports a conclusion that the Staff is endeavoring to do its job.

Citizens nevertheless assert that, because a confirmatory analysis of a metal fatigue analysis using the Green's function at a different facility (the Vermont Yankee facility) for a different nozzle (a feedwater nozzle) indicated a CUF that was forty percent higher than the

---

[11] Although section 2.326(a)(2) states only that the motion "must address a significant safety . . . issue," we believe it is implicit that the motion must identify a deficiency in the license renewal application that gives rise to a significant safety issue. Citizens do not appear to disagree, arguing that the metal fatigue calculation for the Oyster Creek recirculation nozzle is deficient, and that this deficiency presents a significant safety issue. See Citizens' Motion to Reopen at 7.

earlier analysis, a similar "confirmatory analysis at Oyster Creek is likely to find that the metal fatigue of the recirculation outlet nozzle would go beyond its allowable limits during the proposed period of extended operation" (Citizens' Motion to Reopen at 7) (citing Hopenfeld Decl. ¶ 9). However, Citizens provide no factual evidence or expert testimony showing that the analysis used at Oyster Creek employing the Green's function was improperly performed so as to result in a deficient, non-conservative CUF for the recirculation nozzle. This omission – that is, this failure to provide the evidentiary support required by section 2.326(b) regarding an alleged deficiency in AmerGen's license renewal application – is fatal to Citizens' effort to present a "significant safety . . . issue" (10 C.F.R. § 2.326(a)(2)).

In this regard, AmerGen cogently states that Citizens' failure to show a connection between the revised CUF results for the Vermont Yankee feedwater nozzle and the expected results for the Oyster Creek recirculation nozzle is understandable, because "the analyses would involve different plant designs, different components, and, as the [April 2008 RIS] explains, each individual fatigue calculation is a complex analysis involving a great deal of judgment by the analyst" (AmerGen's April 28 Answer at 28). Citizens' reliance on the CUF reanalysis at the Vermont Yankee facility thus falls short of satisfying their obligation under 10 C.F.R. § 2.326(b) to provide factual or technical support to show a deficiency in the CUF computation, let alone satisfying their obligation to show that such a deficiency in this case raises a significant safety issue.

Nor can Citizens satisfy their burden of showing that the alleged non-conservatism in the CUF computation gives rise to a significant safety issue by making the generalized claim that their issue relates to a "safety-critical component" (Citizens' Motion to Reopen at 1). Binding case law establishes that a movant who seeks to reopen the record does *not* show the existence of a significant safety issue by merely showing that a plant component "perform[s]

safety functions and thus ha[s] safety significance" (Pub. Serv. Co. of N.H. (Seabrook Station, Units 1 & 2), CLI-90-06, 31 NRC 483, 487 (1990)).

As the NRC Staff correctly states, the "relevant issue is not the safety significance of the components per se, but rather the safety significance of the alleged probable non-conservatism as it relates to these components" (NRC Staff's April 28 Answer at 7 n.14). Citizens have provided no factual or technical information to support a conclusion that the putative deficiency in calculating the recirculation nozzle CUF will present a significant safety issue. Rather, they have assumed that the CUF analysis for the recirculation nozzle at Oyster Creek is non-conservative. From this assumption they have concluded – without adequate expert testimony or analysis – that the putative non-conservative CUF will result in a failure of the nozzle that will cause safety-significant harm. Citizens' argument, which asserts a speculative conclusion derived from a conjectural assumption, fails to present a significant safety issue.

Citizens point to a statement in a newspaper article attributed to an NRC spokesperson that breakage of a recirculation nozzle "'could lead to a severe accident'" (Citizens' Motion to Reopen at 7-8) (quoting Todd Bates, NRC Wants Nuclear Plant's Water Nozzles Rechecked, Asbury Park Press, Apr. 7, 2008). Contrary to Citizens' understanding, however, this statement – which simply acknowledges the unremarkable truism that "*breakage"* of certain components in a nuclear facility *"could"* have severe consequences – does not demonstrate that Citizens' newly proffered contention raises a significant safety issue. The salient inquiry is not whether *breakage* of a recirculation nozzle *could* lead to a severe accident. It is, instead, whether Citizens have adequately shown, with the evidence required by 10 C.F.R. § 2.326(b), that the alleged errors in analysis of the CUF for the Oyster Creek recirculation nozzle are linked to a

significant safety issue incident to those alleged errors. The answer to the latter inquiry is "no."[12]

We thus conclude that Citizens fail to satisfy the burden imposed by section 2.326(a)(2) of showing, with the quantum of evidence required by section 2.326(b), that their motion reveals a deficiency in the license renewal application that presents a significant safety issue. See AmerGen's April 28 Answer at 14-16. Their April 18 motion to reopen the record must therefore be denied.

(b) Although our determination that Citizens' April 18 motion to reopen fails to satisfy 10 C.F.R. § 2.326(a)(2) is sufficient by itself to deny the motion, we also conclude that Citizens' newly proffered contention, by its own terms, has been rendered moot by AmerGen's May 1 RAI response and, for this reason as well, fails to present a significant safety issue. See NRC

---

[12] According to Dr. Hopenfeld, Citizens' newly proffered contention presents a significant safety issue because it is likely that a re-analysis of the recirculation nozzle CUF "that complies with the ASME Code would predict that the CUF would become greater than one [thus exceeding the ASME Code] during the proposed period of extended operation" (Hopenfeld Decl. ¶ 9). But Dr. Hopenfeld fails to provide adequate support for the notion that a re-analysis of the CUF that complies with the ASME Code will likely exceed one; indeed, his assertion is negated by a sworn affidavit from AmerGen's expert (infra Part II.B.1(b)). Nor does Dr. Hopenfeld testify as to the consequence of the CUF exceeding one. As a result, Citizens fail adequately to provide the "factual and/or technical bases" (10 C.F.R. § 2.326(b)) showing that their motion addresses a significant safety issue. At a minimum, for Citizens to have shown, with the evidence required by section 2.326(b), that the alleged deficiency presents a significant safety issue, Dr. Hopenfeld would have needed to explain, for example, the meaning of the CUF, why exceeding a CUF of one is not permitted unless authorized by the NRC Staff, the types of failures of the recirculation nozzle that might occur if the CUF exceeds one and the spectrum of their likelihood, and the events that might occur if the recirculation nozzle failed incrementally or catastrophically. Citizens' failure to include a properly supported "specific explanation" (ibid.) of why their newly proffered contention presents a "significant safety . . . issue" (id. § 2.326(a)(2)) mandates that their motion to reopen be denied.

Moreover, our review of the expert opinion provided by the NRC Staff (see infra Part II.B.2) also supports our conclusion that a significant safety issue is not presented on this record. See Private Fuel Storage, L.L.C., CLI-05-12, 61 NRC at 350; Pub. Serv. Co. of N.H., CLI-90-10, 32 NRC at 222.

Staff's Explanatory Pleading and Affidavit at 4; AmerGen's Response to May 21 Board Order at 6.[13]

The new contention advanced in Citizens' April 18 motion is a contention of omission – that is, it "alleges the [improper] omission of particular information or an issue from an application" (Duke Energy Corp. (McGuire Nuclear Station, Units 1 & 2; Catawba Nuclear Station, Units 1 & 2), CLI-02-28, 56 NRC 373, 383 (2002)). Specifically, Citizens assert the absence from AmerGen's license renewal application of a confirmatory analysis predicting metal fatigue for the recirculation outlet nozzle at Oyster Creek. Citizens thus contend that AmerGen should be required to perform a "confirmatory analysis using a conservative method . . . to establish whether [that nozzle] could exceed allowable metal fatigue limits" during the renewal period (Citizens' May 5 Reply to AmerGen at 3).[14]

---

[13] Citizens argue that this Board should ignore AmerGen's RAI response, because it was submitted to this Board under cover of AmerGen's May 5 letter, which "was not an authorized pleading and therefore AmerGen should not be permitted to gain any advantage from it" (Citizens' May 27 Response and Motion to Supplement at 2-3). We are unpersuaded by Citizens' argument. AmerGen's RAI response was official, docketed material relating to AmerGen's license renewal request and, more particularly, relating to AmerGen's performance of a confirmatory fatigue analysis of the Oyster Creek recirculation nozzle. Neither law nor logic supports Citizens' assertion that this Board is foreclosed from considering docketed licensing material that has been submitted to the Board and that, on its face, appears to be relevant to the disposition of a pending motion.

Nevertheless, to provide the parties with a fair opportunity to explain this document and its import, we directed them to submit an affidavit authored by an appropriate expert discussing the significance of AmerGen's RAI response, accompanied by a pleading explaining the impact of that material on Citizens' motion to reopen the record and to add a new contention (May 21 Board Order at 2). To the extent that AmerGen's submission of its RAI response to this Board under cover of a May 5 letter was "procedurally deficient" (Citizens' May 27 Response and Motion to Supplement at 3), AmerGen's submission of a pleading in compliance with our May 21 order corrected that deficiency. Moreover, Citizens' submission of a pleading discussing the import of the RAI response obviated any potential procedural prejudice.

[14] As this Board previously has explained in this proceeding "[t]here is a difference between contentions that, on the one hand, allege that a license application suffers from an improper omission, and contentions that, on the other hand, raise a specific substantive challenge to how particular information or issues have been discussed in a license application"

(continued...)

As with all contentions of omission, if the applicant supplies the missing information – or, as relevant here, if the applicant performs the omitted analysis – the contention is moot (Duke Energy Corp., CLI-02-28, 56 NRC at 383). In the instant case, on May 1, 2008, AmerGen provided the NRC Staff with docketed, licensing material stating that, in compliance with the Staff's request, it "performed confirmatory fatigue analysis of the Oyster Creek . . . recirculation outlet nozzle in accordance with the ASME Code . . . . This new analysis confirms that the results of the original analysis [that used the Green's function methodology] are conservative and remain acceptable" (Enclosure to AmerGen May 5 Letter, RAI Response at 2).

Thereafter, in response to this Board's order of May 21, 2008, AmerGen filed the affidavit of a qualified expert corroborating that "AmerGen's confirmatory evaluation of the recirculation outlet nozzle showed that the maximum CUF with environmental effects included . . . is 0.1366 for 60 years" (Affidavit of Gary Stevens ¶ 9 (May 27, 2008) [hereinafter Stevens Affidavit] (attached to AmerGen's Response to May 21 Board Order (May 27, 2008)). This newly analyzed CUF, stated AmerGen, is "far lower than the previously calculated value of 0.9781 and below the acceptable limit of 1.0 by nearly an order of magnitude" (AmerGen's Response to May 21 Board Order at 5; accord NRC Staff's Explanatory Pleading and Affidavit at 3-4).

Thus, AmerGen has, as requested by Citizens' newly proffered contention, performed a "confirmatory analysis using a conservative method . . . to establish whether [the Oyster Creek recirculation nozzle] could exceed allowable metal fatigue limits" (Citizens' May 5 Reply to AmerGen at 3). Because AmerGen has cured the omission alleged in Citizens' newly proffered contention, the April 18 motion to reopen the record in order to add a new contention has been

---

[14](...continued)
(LBP-06-16, 63 NRC 737, 742 (2006)). As shown above in text, the plain language of Citizens' newly proffered contention reveals that it is a contention of omission alleging that AmerGen should perform a confirmatory analysis.

rendered moot. And because Citizens' motion is moot and, thus, no longer raises a litigable controversy, it fails, definitionally and functionally, to present a significant safety issue.[15]

2. Citizens' April 18 Motion to Reopen Also Fails to Demonstrate that Consideration of its Evidence Would Likely Result in a Materially Different Outcome in the License Renewal Process, 10 C.F.R. § 2.326(a)(3)

A motion to reopen the record must also "demonstrate that a materially different result . . . would have been likely had the newly proffered evidence been considered initially" (10 C.F.R. § 2.326(a)(3)), and this demonstration must be supported by sufficient evidence (id. § 2.326(b)). In cases where the newly discovered evidence relates to a contention that already has been decided adversely to the movant, the movant must demonstrate that the outcome of the adjudication would likely have been materially different had the tribunal considered the new evidence in the first instance. See, e.g., Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation), CLI-06-03, 63 NRC 19, 21-23 (2006).

Here, however, Citizens' newly proffered contention (and its underlying evidence) is unrelated to the contention that this Board adjudicated in LBP-07-17 and that is being considered by the Commission on appeal (supra note 2). Accordingly, rather than showing that their newly proffered evidence would likely have materially altered this Board's disposition of the contention in LBP-07-17, Citizens must show that the evidence supporting their contention would likely have materially affected the outcome of the license renewal proceeding. That is,

---

[15] That Citizens' newly proffered contention in their April 18 motion is moot also means that the motion must be denied on the ground that the contention is inadmissible, because insofar that it fails to raise a live controversy, it fails to raise a "genuine dispute . . . on a material issue of law or fact" (10 C.F.R. § 2.309(f)(1)(vi)).

The Commission has instructed that, at least in a case with an open record, when a contention of omission is rendered moot, the intervenor may be permitted to timely file a new contention arising from the new information (Duke Energy Corp., CLI-02-28, 56 NRC at 383-84). Assuming arguendo that the same principle pertains here, Citizens' May 27 motion seeks to use the new information from AmerGen's May 1 RAI response in support of their motion to reopen. As we show infra Part II.C, Citizens' effort is unavailing.

they must show a likelihood that their contention would be resolved in their favor such that AmerGen's license renewal application would be denied or conditioned. See Private Fuel Storage, L.L.C., CLI-05-12, 61 NRC at 350 (to reopen a closed record to introduce a new issue, the movant has the burden of "showing that the new information will 'likely' trigger a 'different result'").

We have no difficulty concluding that Citizens fail to show a "likelihood that a different result [would] be reached if the information [underlying their newly proffered contention] is considered" (51 Fed. Reg. at 19,537).[16]

First, for essentially the reasons discussed supra Part II.B.1(a), we find that Citizens' "evidence," which fails to present a significant safety issue, also fails to show a likelihood that consideration of their new contention would result in the denial or conditioning of AmerGen's license renewal application. This finding alone suffices to deny Citizens' motion. See Private Fuel Storage, L.L.C., CLI-05-12, 61 NRC at 355 (affirming licensing board's denial of motion to reopen, because the "new contention is much too thinly supported to conclude that taking it to a hearing would 'likely' cause a different result").

Additionally, Citizens' assertion that consideration of their evidence will materially affect the outcome of this proceeding is belied by AmerGen's May 1 RAI response containing the

---

[16] Although the term "likely" in section 2.326(a)(3) is not defined, we construe it – consistent with its commonly understood meaning – to be synonymous with "probable" or "more likely than not." See Webster's Third New International Dictionary of the English Language Unabridged 1310 (1976); cf. 51 Fed. Reg. at 19,536-37 (in selecting a "likelihood" standard, the Commission indicated that a "would have been reached" standard is too strict, and a "might have been reached" standard is too lax). But even assuming arguendo that the "likelihood" standard were less rigorous than a "probability" standard – for example, if it were defined as a more lenient "substantial possibility" standard – we would still find that Citizens failed to satisfy their burden under section 2.326(a)(3).

Significantly, our prior conclusion (supra Part II.B.1(b)) that the new contention proffered in Citizens' April 18 motion has been rendered moot also negates the possibility that Citizens could show that a "materially different result . . . would have been likely had the newly proffered evidence been considered initially" (10 C.F.R. § 2.326(a)(3)).

result of its re-analysis of the recirculation nozzle's CUF. See Private Fuel Storage, L.L.C., CLI-05-12, 61 NRC at 350 (Commission states that licensing board, in denying motion to reopen, properly considered all the evidence when determining whether movant's new information would likely trigger a different result in the proceeding). The re-analysis results indicated a CUF of 0.1366, compared to the CUF of 0.9781 that was calculated using a Green's function. As AmerGen's expert affiant attested, the re-analysis confirms that the fatigue evaluations calculated for purposes of license renewal "provide reasonable assurance that components will not operate beyond their allowable metal fatigue limits during the proposed period of extended operation" (Stevens Affidavit ¶ 9). Accord Affidavit of John R. Fair ¶ 6 (May 27, 2008) [hereinafter Fair May 27 Affidavit] (attached to NRC Staff's Explanatory Pleading and Affidavit (May 27, 2008) (attesting that AmerGen's re-analysis "still shows the CUF of the recirculation outlet nozzle is projected to remain within acceptable limits for the period of extended operation")). The fact that the results from AmerGen's original CUF analysis and its confirmatory analysis both comport with the ASME Code requirement is consistent with our conclusion that, on this record, Citizens fail to demonstrate that consideration of their newly proffered contention would likely cause a materially different outcome in this proceeding.[17]

---

[17] Because Citizens failed to provide an adequate foundation to support the existence of a significant safety issue (supra note 12), it is not surprising that they failed to "demonstrate that a materially different result . . . would have been likely had [their] newly proffered evidence been considered initially" (10 C.F.R. § 2.326(a)(3)). See Pub. Serv. Co. of N.H., CLI-90-10, 32 NRC at 223 ("Because this matter as presented is devoid of safety significance, we see no likelihood whatsoever – let alone a demonstration – that a materially different result would . . . have been likely had the newly proffered evidence been considered initially."). That Citizens have not had the opportunity to examine the analysis underlying AmerGen's confirmatory CUF (see infra note 23) does *not* obviate their burden under section 2.326(a)(3) to "demonstrate" the likelihood of a materially different result. Moreover, if Citizens had satisfied their burden of raising a significant safety issue, we see no reason why their inability to examine the underlying analysis would have prevented an expert from analyzing what could happen and showing the likelihood of a materially different outcome based on a solid technical foundation – if such a foundation existed.

Finally, we conclude that the testimony provided by the NRC Staff expert, John Fair, also supports our conclusion that Citizens fail to satisfy 10 C.F.R. § 2.326(a)(3). In order to demonstrate that their newly proffered evidence would likely cause a materially different result in this proceeding, we believe Citizens must provide evidence showing that some significant safety consequence would arise from the asserted error in CUF computation that would result in the denial or conditioning of AmerGen's license. Citizens fail to make such a showing, and Mr. Fair's affidavit explains their inability to do so. Mr. Fair attests that, based on risk assessments performed at the Pacific Northwest National Laboratory, coupled with the NRC Staff's study of those assessments, the "potential under-prediction of the reactor vessel recirculation nozzle CUF [at Oyster Creek] does not present a significant safety concern" (Affidavit of John R. Fair ¶ 9 (Apr. 28, 2008) [hereinafter Fair April 28 Affidavit]) (attached to NRC Staff's April 28 Answer)). This is so, he explains, because even if the CUF exceeded the ASME Code fatigue limit of 1.0, the likely consequence would be the initiation of a "small, 1/8 inch deep, fatigue crack . . . [resulting in a small leak] that would be detected and repaired" (id. ¶ 7).[18] Mr. Fair's expert opinion and its underlying technical support are not contradicted in the material before us. They buttress our conclusion that Citizens fail to show a significant safety consequence arising from their newly proffered contention, as well as our derivative conclusion that, on this record, Citizens fail to demonstrate that consideration of their newly proffered contention would "likely" cause a materially different outcome in this proceeding (10 C.F.R. § 2.326(a)(3)).[19]

---

[18] AmerGen's license renewal application includes the recirculation outlet nozzle in its list of reactor vessel fatigue monitoring locations (Oyster Creek License Renewal Application, Table 4.3.1-2 (July 26, 2005) (ADAMS Accession No. ML052080185). Additionally, this component is included in the ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD aging management program, which provides for component inspections to detect crack initiation and growth (id., Table 3.1.2.1.5).

[19] To be clear, we do not understand Mr. Fair to be suggesting that the CUF of the Oyster Creek recirculation nozzle exceeds the ASME Code limit of 1.0. See NRC Staff's (continued...)

Citizens thus fail to satisfy their burden under section 2.326(a)(3) of demonstrating that their evidence is likely to materially affect the licensing decision. Our consideration of the affidavits and facts submitted by AmerGen and the NRC Staff fortifies our conclusion that, on this record, a materially different result is not likely. Citizens' April 18 motion to reopen the record must therefore be denied.

* * * * *

In sum, Citizens' April 18 motion to reopen the record must be denied because it fails to provide the evidentiary support required by 10 C.F.R. § 2.326(b) to satisfy the demanding regulatory standards in 10 C.F.R. §§ 2.326(a)(2) and 2.326(a)(3).[20]

We now turn to Citizens' May 27 motion to supplement the basis of their newly proffered contention.

C. Citizens' May 27 Motion To Supplement The Basis Of Their Newly Proffered Contention Fails To Satisfy The Reopening Requirements In 10 C.F.R. § 2.326

1. Citizens' May 27 motion seeks to supplement the basis of their newly proffered contention. Specifically, Citizens challenge the adequacy of the confirmatory analysis reported in AmerGen's May 1 RAI response, arguing that the RAI response confirms that the original metal fatigue prediction is improperly "non-conservative in some respects and non-compliant

---

[19](...continued)
Opposition to Citizens' Request to Reply at 5. If the record supported the conclusion that an applicable standard were being violated, Citizens would have a stronger case for arguing the existence of a significant safety issue. Cf. Vt. Yankee Nuclear Power Corp., ALAB-138, 6 AEC at 528-29 (an applicant's failure to comply with applicable standards may have consequential import in evaluating whether to grant a motion to reopen the record). Rather, we understand Mr. Fair to be explaining that, based on studies by national laboratories and the NRC Staff, Citizens' claim regarding the putative non-conservative CUF is not a significant safety concern and would not give rise to a significant safety consequence.

[20] Because we conclude that Citizens' April 18 motion fails to satisfy the requirements in sections 2.326(a)(2) and 2.326(a)(3), we need not – and do not – consider whether it satisfies the other two requirements for reopening the record, i.e., sections 2.326(a)(1) and 2.326(d).

with the ASME code" (Citizens' May 27 Response and Motion to Supplement at 9). As previously stated (supra text accompanying note 8), because the new basis proffered by Citizens alters the issue presented for this Board's consideration, Citizens' May 27 motion – if it is to be granted – must satisfy the requirements in 10 C.F.R. § 2.326 for reopening the record. We conclude that Citizens' May 27 motion fails to provide the evidentiary support required by 10 C.F.R. § 2.326(b) to satisfy the demanding reopening standards.[21]

Citizens assert that AmerGen's May 1 RAI response reveals that AmerGen was not consistent in its use of conservative assumptions for the confirmatory analysis, and because the metal fatigue calculation is "sensitive to the assumptions used by the analyst," the confirmatory CUF may not be adequately conservative (Citizens' May 27 Response and Motion to Supplement at 6). In particular, Citizens allege that AmerGen took the nozzle cladding into account in the original analysis, but that the cladding was "neglected" in the confirmatory analysis, which allegedly "appears to be the main cause of the decrease in the calculated CUF" (ibid.). Had the analysis taken nozzle cladding into account, assert Citizens, "[i]t is . . . highly likely that . . . the recalculated CUF_{EN} would exceed 1.0" (ibid.). Citizens therefore claim that the confirmatory analysis cannot be used to establish that the original analysis is conservative. See id. at 5-7.

But Citizens' May 27 motion fails to satisfy section 2.326(a)(2), because it fails to provide an adequate factual or technical predicate to show that (1) AmerGen's re-analysis was flawed,

---

[21] On June 5, 2008, Citizens filed a motion to strike the May 27 pleadings of AmerGen and the NRC Staff that addressed AmerGen's RAI responses (supra note 6). Citizens argued that the pleadings exceeded the scope of this Board's May 21 order, and that a failure by this Board to strike those pleadings would deprive Citizens of a meaningful opportunity to respond to the allegedly new material. See Citizens' Motion to Strike at 2-4. We agree with AmerGen and the NRC Staff that Citizens' motion is baseless. Specifically, we conclude that, contrary to Citizens' assertion: (1) the pleadings filed by AmerGen and the NRC Staff fall comfortably within the scope of our May 21 order; and (2) Citizens received a reasonable opportunity to explain the impact of the RAI responses on their motion to reopen the record and, accordingly, they cannot fairly claim that they will suffer an injustice if their motion to strike is denied. See AmerGen's June 16 Answer at 3-4, 6-7; NRC Staff's June 16 Answer at 1-3.

resulting in a deficiency in AmerGen's license renewal application, or (2) any alleged deficiency is linked to a significant safety issue.

First, Citizens fail to provide adequate expert support for the proposition that the asserted shortcomings in AmerGen's re-analysis – in particular, its treatment of the nozzle cladding – resulted in a deficiency in AmerGen's license renewal application. In this regard, they effectively ignore the unequivocal, and undisputed, representation of AmerGen's expert that the confirmatory CUF analysis on the Oyster Creek recirculation nozzle was performed "in accordance with the ASME Code, Section III, Subsection NB-3200 methodology, utilizing all six components of stress in the analysis" (Enclosure to AmerGen May 5 Letter, RAI Response at 2). Accord Stevens Affidavit ¶ 9 (AmerGen expert attests that the confirmatory analysis was "performed using ASME Code, Section III, Subsection NB-3200 methodology"); id. ¶ 10 ("the stainless steel nozzle cladding was considered absent for the fatigue calculation [in the confirmatory analysis, as permitted in NB-3122.3 of Section III of the ASME Code"); Enclosure to AmerGen May 5 Letter, RAI Response at 3 (same).

In the absence of evidence showing that an analytic procedure in the ASME Code is flawed, or that AmerGen failed to comply with that procedure, we conclude that Citizens' attack on AmerGen's confirmatory analysis is insubstantial and fails to show the existence of a deficiency in the license renewal application for purposes of reopening the record.[22]

Citizens also fail to link an alleged inadequacy in the confirmatory analysis with a significant safety issue. The Second Hopenfeld Declaration assails what it perceives to be

---

[22] Citizens' bare assertion that the original analysis for the recirculation nozzle is "non-compliant with the ASME Code" (Citizens' May 27 Response and Motion to Supplement at 9) is inadequate to support admission of a contention (10 C.F.R. § 2.309(f)(1)(v)), much less to support reopening of the record. Moreover, because both the original and confirmatory analyses indicate that the recirculation nozzle meets ASME Code requirements, Citizens bear the burden of making a sufficient showing that both analyses are inadequate and that their inadequacy raises a significant safety issue. This they have failed to do.

potential inadequacies in the re-analysis (Citizens' May 27 Response and Motion to Supplement, Second Declaration of Dr. Joram Hopenfeld ¶¶ 4-6, 8-12 (May 23, 2008) [hereinafter Second Hopenfeld Decl.]). But, for essentially the reasons discussed supra Part II.B.1, there is insufficient support for the proposition that these putative inadequacies would cause a nozzle failure resulting in safety-significant harm. Because Citizens fail to provide the factual or technical support required in 10 C.F.R. § 2.326(b) to demonstrate the existence of a significant safety concern pursuant to 10 C.F.R. § 2.326(a)(2), their request to reopen the record to supplement their newly proffered contention must be denied.[23]

Citizens' May 27 motion also fails to demonstrate that their newly proffered evidence regarding alleged deficiencies in the confirmatory analysis would "likely" lead to a materially different result in the Oyster Creek license renewal proceeding. See 10 C.F.R. § 2.326(a)(3). As stated above, the Second Hopenfeld Declaration fails to provide meaningful factual or technical support for the notion that the analytic procedures in the ASME Code are flawed, that AmerGen failed to comply with those procedures, or that the confirmatory CUF (or the original CUF) for the Oyster Creek recirculation nozzle exceeds the ASME Code limit. Because the record is essentially bereft of evidence showing that Citizens' May 27 motion is likely to lead to a materially different result in this license renewal proceeding, the motion fails to satisfy section 2.326(a)(3) and, accordingly, it must be denied.[24]

---

[23] Citizens assert that AmerGen should be required to disclose information "underlying [the confirmatory analyses] and any documents that were referenced by the analyses to support the assumptions made" (Citizens' Motion to Strike at 7). Accord Citizens' May 27 Response and Motion to Supplement at 4. This assertion lacks merit. It is well established that discovery is not permitted for the purpose of developing a motion to reopen the record or to assist a petitioner in the framing of contentions. See Balt. Gas & Elec. Co. (Calvert Cliffs Nuclear Power Plant, Units 1 & 2), CLI-98-25, 48 NRC 325, 351 (1998); Metro. Edison Co. (Three Mile Island Nuclear Station, Unit 1), CLI-85-7, 21 NRC 1104, 1106 (1985); see also Pub. Serv. Co. of N.H., ALAB-915, 29 NRC at 432-33.

[24] Dr. Hopenfeld opines that the differences in assumptions between the original (continued...)

In addition to the foregoing shortcomings that are fatal to Citizens' May 27 motion, we observe that before Citizens' motion could have been granted, Citizens must also have demonstrated both that it is timely (10 C.F.R. § 2.326(a)(1)) and that it satisfies the balancing test in 10 C.F.R. § 2.309(c)(1) as required by section 2.326(d). Citizens' May 27 motion fails to address these requirements, "which is reason enough to deny it" (CLI-08-13, 67 NRC __, __ (slip op. at 4) (June 17, 2008). See also Pub. Serv. Co. of N.H., ALAB-915, 29 NRC at 432 ("the Commission expects its adjudicatory boards to enforce [reopening requirements] rigorously – i.e., to reject out-of-hand reopening motions that do not meet those requirements within their four corners").

Because Citizens have not demonstrated that their May 27 motion satisfies any, much less all, of the reopening requirements in 10 C.F.R. § 2.326, their motion must be denied.

2. Our denial of Citizens' motion to reopen the record does not foreclose them from pursuing future relief. In this regard, we note that the NRC Staff has represented that it will review AmerGen's "confirmatory analysis and report the results of its review in a supplement to the Safety Evaluation Report Related to the License Renewal of Oyster Creek Generating Station" (Fair May 27 Affidavit ¶ 5). See Balt. Gas & Elec. Co. (Calvert Cliffs Nuclear Power Plant, Units 1 & 2), CLI-98-25, 48 NRC 325, 350 (1998) (the NRC Staff is required to "consider and resolve all safety questions regardless of whether any hearing takes place"). To the extent the Staff's publication of its review of AmerGen's confirmatory analysis reveals new, material

---

[24](...continued)
and confirmatory analyses "are material to the outcome of the fatigue analysis and if accepted by the NRC they would represent a material change to the Final Safety Evaluation Report" (Second Hopenfeld Decl. ¶ 5). This statement appears to misconstrue the "materially different result" standard in 10 C.F.R. § 2.326(a)(3). A decision by the NRC Staff to revise the Final Safety Evaluation Report to account for AmerGen's confirmatory analysis would not, standing alone, be a materially different result that justifies reopening the record, because it would neither change the outcome of this renewal proceeding nor impose a different licensing condition on AmerGen.

information that Citizens can demonstrate satisfies the stringent reopening requirements in 10 C.F.R. § 2.326, Citizens would be free to file a motion with the Commission to reopen the record. Alternatively, Citizens would be free to file a request to "modify, suspend, or revoke [AmerGen's] license, or for any other action as may be proper" (10 C.F.R. § 2.206(a)). Cf. CLI-08-13, 67 NRC at __ (slip op. at 5) ("A license renewal may be set aside (or appropriately conditioned) even after it has been issued, upon subsequent administrative or judicial review.").

But on the present record, Citizens fail to show a factual or technical predicate adequate to satisfy the demanding requirements in section 2.326 for reopening the record.[25]

[25] Although we do not presume to direct the NRC Staff in the performance of its duties, we nevertheless observe that it might reasonably be expected that the Staff – in the course of reviewing the adequacy of AmerGen's confirmatory analysis – would scrutinize the data and information underlying the analysis, including any documents that were referenced by the analysis to support the assumptions made. And in light of the concerns raised in this proceeding, it cannot be gainsaid that the public interest would be served if the Staff's supplement to the Safety Evaluation Report reporting its review of AmerGen's confirmatory analysis were sufficiently detailed to allay any public apprehension regarding the ability of the recirculation nozzle to function safely and reliably during the renewal period. Cf. CLI-08-13, 67 NRC at __ (slip op. at 5) (Commission states it is "confident that the review of the metal fatigue issue that the NRC Staff initiated will result in a full consideration of the issue and appropriate licensing action once all the facts are known and reviewed").

III. CONCLUSION

For the foregoing reasons, we: (1) deny Citizens' April 18 motion to reopen the record and to admit a new contention (supra Part II.B); (2) deny Citizens' May 27 motion to supplement the basis of their contention (supra Part II.C); (3) grant Citizens' motion to file their May 6 Reply (supra note 5); and (4) deny Citizens' motion to strike the May 27 pleadings of AmerGen and the NRC Staff addressing AmerGen's RAI response (supra note 21).

It is so ORDERED.[26]

THE ATOMIC SAFETY
AND LICENSING BOARD *

/RA/

E. Roy Hawkens, Chairman
ADMINISTRATIVE JUDGE

/RA/

Dr. Paul B. Abramson
ADMINISTRATIVE JUDGE

* Judge Baratta has filed a Dissenting Opinion that immediately follows this Memorandum and Order.

Rockville, Maryland
July 24, 2008

[26] Copies of this Memorandum and Order were sent this date by Internet e-mail to counsel for: (1) Citizens; (2) AmerGen; (3) the NRC Staff; and (4) New Jersey.

Dissent of Judge Baratta

In contrast to the Majority, I find that Citizens have met the stringent burdens of 10 C.F.R. § 2.326 and the motion to reopen should be granted. Citizens have proferred admissible evidence of new information that raises a significant safety issue, an issue of grave importance that the Board would have considered in the now closed Oyster Creek proceeding.

Before turning to a discussion of how Citizens have met the reopening standards under 10 C.F.R. § 2.326, I wish to comment on a point where I feel the Majority errs. They have concluded without adequate discussion that Citizens' contention is a contention of omission, i.e., one that alleges a failure on the part of the applicant to include necessary information in the application, and has therefore been rendered moot. A thorough reading of Citizens' contention as set forth in both their April 18 and May 27 motions reveal that, because the contention cannot properly be answered by AmerGen's submission of information, it is not a contention of omission. Rather, the contention can be more appropriately characterized as a challenge to the adequacy of the methodology used in the application, encompassing not only the failure to include the proper information but also the failure to utilize the correct conservative methodology.[1] The affidavits provided by both AmerGen and Citizens reflect two competing views of the adequacy of the "missing information." As these issues are in dispute between the participants, the Majority is mistaken in claiming that the proffered contention has been rendered moot. Additionally, it is premature at this juncture to render an advanced contention moot where no hearing has been established, no contention has been admitted, and the scope of the possible contention has not been determined.

---

[1] In my view, it would be appropriate for the Board to reframe the contention to promote efficiency and simplicity. Quoting AmerGen Energy Corp. (Oyster Creek Nuclear Generating Station), LBP-06-22, 64 NRC 229, 236 n.10 (2006), the "Board has discretion to reframe contention 'for purposes of clarity, succinctness, and a more efficient proceeding.'" (Andrew Siemaszko, CLI-06-16, 63 NRC 708, 720 (2006); Virginia Electric & Power Co. (North Anna Power Station, Units 1 and 2), LBP-84-40A, 20 NRC 1195, 1199 (1984)).

A. The Proffered Contention Raised By Citizens Meets The Standards For Reopening The Oyster Creek Proceeding As Set Forth In 10 C.F.R. § 2.326.

1. I now turn to the central issue, whether Citizens have satisfied the reopening standards set forth in 10 C.F.R. § 2.326.

Although not necessary to the Majority, given their conclusion that Citizens' motion fails to meet the second and third factors under the reopening standard in section 2.326(a), I note initially my conclusion that the new contention meets the standards of 10 C.F.R. § 2.326(a)(1) as well as the standard for late-filed contentions set forth in 10 C.F.R. § 2.309(f)(2). As delineated by the Majority, Citizens must demonstrate that their contention has met the stringent standards for reopening expressed by 10 C.F.R. § 2.326. For a newly proffered contention to be timely, including as in this case, one not previously considered by this Board, the contention must meet the timeliness standards of section 2.326(a)(1) as well as 10 C.F.R. § 2.309(c).

The Staff argues that Citizens failed to act diligently in filing the new contention, claiming they should have formulated and proffered their contention in the summer of 2006 following receipt of AmerGen's response to a Staff RAI concerning the calculation of fatigue usage factors. See NRC Staff's April 28 Answer at 10. The Staff RAI states however that:

> Section 4.3.4 of the license renewal application discusses the evaluation of the effects; of the reactor coolant environment on the fatigue life of components and piping. Table 4.3.4-1 provides the overall environmental fatigue multipliers for the components analyzed. Provide the calculation of the environmental factors for the RPV inlet and outlet nozzles and the feedwater nozzle. Explain how each parameter used in the calculation was determined.

NRC Request for Additional Information Related to Oyster Creek Generating Station License Renewal Application (Apr. 29, 2008). In their response to the RAI, AmerGen states, "[t]he environmental fatigue calculations for the recirculation inlet and outlet nozzles and the feedwater nozzle are contained in Structural Integrity Associates Calculation No. OC-05Q-314, Revision 0, 'Environmental Fatigue Calculations for RPV Locations' (proprietary)" (Response to RAI Dated March 30, 2006 Related to Oyster Creek License Renewal Application at 6 (May 1, 2006) (ADAMS Accession No. ML061240217)). AmerGen goes on to describe the use of

bounding environmental fatigue multipliers used to account for the use of hydrogen water chemistry. See id. at 6-7. Nowhere in that discussion does AmerGen mention the use of the Green's Function methodology or the application of the methodology to determine the fatigue usage factor for the recirculation line nozzle. Only in a footnote to the results of the calculation does AmerGen make a reference to any methodology. There, AmerGen states that the calculations were performed using an "updated ASME Code fatigue methodology" (id. at 8 n.1). It is difficult to see how such a vague reference or discussion that fails to mention any specific methodology, let alone the one in question, could, as the Staff seems to suggest, serve as the event upon which Citizens or any intervenor could have based a contention such as the one proffered here by Citizens.

It is even more difficult to accept AmerGen's argument that the contention should be based on the 2005 Oyster Creek License Renewal Application (LRA). In the LRA, AmerGen states that "[s]tressed-based fatigue monitoring consists of computing a 'real-time' stress history for a given component from actual temperature, pressure, and flow histories via a finite element based Green's Function approach" (Oyster Creek License Renewal Application at 4-25 (July 26, 2005)). No detail of how the temperature, pressure and flow histories are used is provided or how the Green's Function method is applied is given in the LRA. Instead, the LRA simply states that the approach used an "appropriate ASME Code, Section III fatigue analysis methodology" (ibid.).

It is not until January 8, 2008, that there is any discussion in the public record concerning possible problems with the manner in which the Green's Function methodology is used. At a public meeting held by the Staff in connection with the ongoing Entergy Vermont Yankee LRA, the Staff questioned the use of the simplified Green's Function methodology as applied to the Vermont Yankee LRA. See Hopenfeld Decl. ¶ 4. During the presentations, Entergy's expert noted that the same methodology as used to calculate the cumulative usage factors (CUFs) in the Vermont Yankee LRA was also used in the Oyster Creek LRA (ibid.; see also Presentation

to NRC Staff Regarding Reactor Pressure Vessel Nozzle Environmental Fatigue Analyses for License Renewal at 20 (Jan. 8, 2008)).

It is not until the memo of April 3, 2008, that CUFs for Oyster Creek, calculated using the Green's Function methodology, are called into question. In the memo to the Commission, the Staff identifies that the approach used in the Oyster Creek LRA is possibly non-conservative. See April 3 Commission Notification.

Shortly thereafter, on April 18, 2008, Citizens filed a motion with the Commission seeking to reopen the record in the Oyster Creek case and to file a new contention. In their motion, Citizens argued that the Commission should admit the following new contention:

> The predictions of metal fatigue for the recirculation nozzles at Oyster Creek are not conservative. A confirmatory analysis using a conservative method is required to establish whether these nozzles could exceed allowable metal fatigue limits during any extended period of reactor operation.

Citizens' Motion to Reopen at 12. The proffered contention was filed promptly upon public availability of the Commission's notification, despite the fact that the document was not placed in the Oyster Creek docket.

Timeliness as measured under the NRC regulations is from the point at which new information is discovered relevant to the question. See Pub. Serv. Co. of N.H. (Seabrook Station, Units 1 & 2), CLI-90-06, 31 NRC 483 (1990). As the Commission has recognized, although an intervenor may have less resources and ability than other participants, they share the same burden of uncovering relevant information that is publicly available. See Duke Power Co. (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 NRC 1041, 1048 (1983). Here, Citizens have met this obligation by discovering the new information (the April 3rd memo to the Commission) regarding the possible non-conservative nature of the CUFs through a diligent

search. Since the CUFs were only called into question on April 3rd, Citizens' motion, filed within 15 days, must be considered timely.[2]

Finally, even if we were to accept the arguments of the Staff and AmerGen that the motion is not timely, "if the problem raised presents a sufficiently grave threat to public safety, a board should reopen the record to consider it even if it is not newly discovered and could have been raised in timely fashion" (Vt. Yankee Nuclear Power Corp. (Vermont Yankee Nuclear Power Station), 6 AEC 358, 365 n.10 (1973)).[3]

2. Relative to section 2.326(a)(2), the proffered contention raises a significant safety issue that should be heard by this Board. The Majority errs in finding Citizens' evidence insufficient to raise an issue of safety significance. My colleagues erroneously conclude:

> A petitioner's assertion that a new contention presents a significant safety issue must be supported by affidavits that 'set forth the factual and/or technical bases' for the allegation (10 C.F.R. § 2.326(b)). . . . [T]heir affidavit must provide sufficient information to support a prima facie showing that (1) a deficiency exists in the license renewal application, and (2) the deficiency presents a significant safety issue.

---

[2] For filing new contentions, Boards have generally established a deadline of 30 days to be timely after the receipt of new information. See, e.g., Entergy Nuclear Vt. Yankee, LLC (Vermont Yankee Nuclear Power Station), LBP-06-14, 63 NRC 568, 574 (2006); Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation), 52 NRC 226, 231 (2000).

[3] 10 C.F.R. § 2.326 allows for reopening of the record even if untimely in section 2.326(a)(1) where it states, "[h]owever, an exceptionally grave issue may be considered in the discretion of the presiding officer even if untimely presented."

Majority at 11-12. They therefore conclude that Citizens' April 18 motion fails,[4] while disregarding the fact that case law does not support their assertion. The Majority's decision erroneously hinges on the evidence presented by Citizens in support of their contention, namely the declaration of their expert Dr. Hopenfeld, which cites to the Staff's findings and AmerGen's methodology. See Hopenfeld Decl. What the Majority fails to reconcile, while citing to Citizens' lack of factual support by way of affidavits, is that the Staff's findings coupled with the Applicant's admissions, as critiqued by Dr. Hopenfeld, are sufficient to support the newly proffered contention.[5] Although the standard for reopening a proceeding is stringent and requires strict evidentiary proof, previous Boards have recognized the difference in situations where the Staff itself presented the new information upon which the intervenor relies as support for a new contention. Specifically, as a past Board has stated:

> While [detailed affidavits are generally required], we believe that there is no need for, and no purpose served by, such an affidavit when the evidence presented by the motion is a letter issued by the staff or the applicant which on its face raises a serious safety question. We should not require an intervenor to retain its own expert to attest to the findings of the staff's or the applicant's experts. Those findings, embodied in a letter, can often stand alone. To be sure, if the seriousness or relevance of the matter raised by the letter is not apparent, an intervenor would need to reinforce the letter with an affidavit of the type suggested by the applicant.

[4] It is unclear why the Majority has considered the April 18 motion by Citizens and the May 27 supplement to the motion as separate motions to reopen. See Majority at 11, 22. In an order dated May 21, 2008, the Board asked the parties to submit affidavits and explanatory pleadings regarding AmerGen's letter to the NRC Chairman and the impact it would have on Citizens' motion to reopen the record. See Licensing Board Order (Directing Parties to Submit Explanatory Pleadings and Affidavits) at 1-2 (May 21, 2008) (unpublished). In response to this Board's order, Citizens filed a motion to supplement the basis of their contention, explaining the legal impact the letter had on their motion to reopen. See Citizens' May 27 Response and Motion to Supplement (May 27, 2008). For the purposes of this decision, Citizens' motion to supplement the basis of their contention should be considered an addendum to the April 18 motion.

[5] The Majority asserts that Citizens have failed to make a prima facie showing. While I disagree, I feel that neither the Applicant nor the Staff have provided sufficient evidence of a technical nature to contradict the assertions and evidence put forth by Citizens.

Vt. Yankee Nuclear Power Corp., 6 AEC at 364.[6] In this case, Citizens cite a statement attributed to a NRC spokesperson who stated that if a recirculation nozzle breaks, "it could lead to a severe accident, it would be a challenging situation for the control room operators" (Citizens' Motion to Reopen at 7-8) (citing Statement of Todd Bates, NRC Wants Nuclear Plant's Water Nozzles Rechecked, Asbury Park Press, April 7, 2008). In disregarding the import of that statement, my colleagues state that:

> [t]he salient inquiry is not whether *breakage* of a recirculation nozzle *could* lead to a severe accident. It is, instead, whether Citizens have adequately shown, with the evidence required by 10 C.F.R. § 2.326(b), that the alleged errors in analysis of the CUF for the Oyster Creek recirculation nozzle are linked to a significant safety issue incident to those alleged errors. The answer to the latter inquiry is "no."

Majority at 14-15. I find the Majority's statement totally unpersuasive for several reasons. First, in a report to Congress in 1995, the NRC was required to identify information on abnormal occurrences which the Commission determined to be "significant from the standpoint of public health and safety" (60 Fed. Reg. 35,566, 35,567 (July 10, 1995)). The NRC reported that "[t]he accident scenarios of primary concern are the main steam line break and the recirculation line break, which are normally referred to as loss-of-coolant accidents" (ibid. (emphasis supplied)).

---

[6] Although this case was established previous to the regulation codification in 1986, the Commission stated in its statement of consideration that:

> The present rule is not, except where noted, intended to wipe out NRC case law concerning motions to reopen. . . . Nevertheless, to avoid confusion, the Commission is specifically adopting the NRC case law requirement that affidavits be given by competent individuals with knowledge of the facts or experts in the disciplines appropriate to the issues raised.

51 Fed. Reg. 19,535, 19,537 (1986). I rely on this case only to point out that Citizens need not present additional affidavits to restate what information the Staff has found self-evident. Indeed, in this case, Citizens have presented an affidavit of an expert, no different from that of the affidavit of Staff's expert, which attests to the safety significance of the new information and its effect on the outcome of the proceeding. The fact remains that Citizens have presented a declaration of an expert, as well as citations in the petition, that clearly and reliably demonstrate the existence of a significant safety issue. The regulations were codified to reflect the Commission's desire to discourage frivolous motions for reopening put forth by petitioners without any affidavits or factual support, not to prevent reopening in a case where competent evidence has been put forth by motion and affidavit, representing a significant safety issue that would have been considered in the previous proceeding.

Are my colleagues now questioning the safety significance of a recirculation line break? Secondly, the studies performed by the Staff of metal fatigue acknowledge that a component that has a CUF greater than 1.0 is of concern. Even Mr. Fair, the Staff's expert, clearly understood that an obvious consequence of fatigue failure of the nozzle is a loss-of-coolant accident since he addresses it in his affidavit. See Fair April 28 Affidavit.

The Majority's view that Citizens have not met the standards for reopening is extreme and based on a far too narrow reading of the record before us. Citizens have raised technical concerns proffered by an expert about an analysis of the CUF for the Oyster Creek recirculation nozzle that is linked to a significant safety issue that will result from those alleged errors. The whole basis for the time limited aging analysis ("TLAA") required for license renewal is the analysis of the structures, systems and components ("SSCs") deemed safety critical to see if they can perform their function throughout the period of extended operation. If offering evidence that this analysis is flawed is insufficient to warrant further investigation, then what is?

As my colleagues correctly note, case law establishes that a petitioner seeking to reopen the record does not show the existence of a significant safety issue by showing merely that a plant component "perform[s] safety functions and thus ha[s] safety significance" (Pub. Serv. Co. of N.H. (Seabrook Station Units 1 & 2), CLI-90-06, 31 NRC 483, 487 (1990)). However, Citizens have presented "relevant, material, and reliable" evidence, as required by 10 C.F.R. § 2.337(a), of a significant safety issue by means of an expert affidavit, Staff reports, and statements by the Commission and the NRC.

Additionally, unlike my colleagues I do not find convincing the statements of NRC expert John Fair, attesting that a non-conservative CUF for the recirculation nozzle will likely *not* cause safety-significant harm. Mr. Fair's statement is based in part on the "NRC Office of Nuclear Regulatory Research" ("RES") risk study indicating that a fatigue failure of piping is not a significant contributor to the core-melt frequency. See SECY-95-245 (Completion of the Fatigue

Action Plan) (Sept. 25, 1995). Core damage frequency ("CDF")[7] was the measure used to assess the safety significance of the concern. The RES risk study result is due to contributing reasons in the risk assessment including the fact that, while fatigue cracks may occur if the CUF exceeds 1.0, the cracks may not propagate through the pressure boundary and lead to leakage or failure of the component and, even if failure of the component did occur, safety systems, such as the emergency core cooling system ("ECCS"), could mitigate the consequences. The Staff did not recommend further action to address environmental fatigue at operating plants because the risk study indicated that the environmental fatigue issue was not a significant safety concern. However, as noted by Mr. Fair, "SECY-95-245 indicated that the Staff would consider the need to evaluate a sample of components with high fatigue usage for any proposed period of extended operation" (Fair April 28 Affidavit ¶ 6).

Mr. Fair recounts that the Staff developed GSI-190, "'Fatigue Evaluation of Metal Components for 60-year Plant Life,' in order to assess the issue of the fatigue life of components in reactor water environments for the license renewal period of extended operation" (id. ¶ 7). In a memorandum to W. Travers from A. Thadani, "Closeout of Generic Safety Issue 190, 'Fatigue of Metal Components for 60-Year Plant Life,' December 26, 1999 (ML031480383)", it was recommended that applicants "address the effects of the environment on the fatigue life of components as aging management programs for license renewal because of the potential for an increased frequency of pipe leaks as plants continue to operate" (ibid.).

I believe this is precisely what Citizens are seeking to litigate, namely that the CUF be conservatively estimated using an accepted method, and that, if found to be questionable, then the appropriate aging management plan be appropriately modified consistent with the regulations.

---

[7] SECY-95-245 used the term core-melt frequency, which is the same as core damage frequency (CDF). CDF is the frequency of the combinations of initiating events, hardware failures, and human errors leading to the core becoming uncovered with reflooding of the core not imminent.

Unfortunately, my colleagues and the Staff do not appear to agree. Rather, they give insufficient consideration to one of the fundamental principles underlying nuclear safety when they accept the notion that if a fatigue crack were to develop in the recirculation line nozzle and result in a small break loss of coolant accident, then the likelihood of core damage is small since the emergency core cooling system could easily cool the core and prevent core damage. To the contrary, the conclusion that fatigue cracking of the recirculation nozzle is not a safety significant event is a grave error.

Such a conclusion is not consistent with a basic tenet of nuclear safety, defense in depth.[8] As an attachment to SECY-98-144[9] states, "most of NRC's regulations were developed without the benefit of quantitative estimates of risk. The perceived benefits of the deterministic and prescriptive regulatory requirements were based mostly on experience, testing programs and expert judgment, considering factors such as engineering margins and the principle of defense-in-depth" (SECY-98-144 (Staff Requirements- White Paper on Risk-Informed and Performance-Based Regulation) (Mar. 1, 1999) (emphasis supplied)). The paper notes, however, that the PRA policy statement requires that the use of PRA be done "in a manner that complements the NRC's deterministic approach and supports the NRC's traditional defense-in-depth philosophy" (ibid. (emphasis supplied)). It further states that, "[t]he concept of defense-in-

[8] SECY 98-144 defines defense in depth as:

> an element of the NRC's Safety Philosophy that employs successive compensatory measures to prevent accidents or mitigate damage if a malfunction, accident, or naturally caused event occurs at a nuclear facility. The defense-in-depth philosophy ensures that safety will not be wholly dependent on any single element of the design, construction, maintenance, or operation of a nuclear facility. The net effect of incorporating defense-in-depth into design, construction, maintenance, and operation is that the facility or system in question tends to be more tolerant of failures and external challenges.

SECY-98-144 (Staff Requirements- White Paper on Risk-Informed and Performance-Based Regulation) (Mar. 1, 1999) (emphasis supplied).

[9] SECY-98-144 promulgates an enclosure that is the basis for a white paper that defines the terms and Commission expectations for risk-informed and performance-based regulation.

depth has always been and will continue to be a fundamental tenet of regulatory practice in the nuclear field, particularly regarding nuclear facilities" (id. ¶ 6). The paper concludes that:

> [s]tated succinctly, a risk-informed, performance-based regulation is an approach in which risk insights, engineering analysis and judgment including the principle of defense-in-depth and the incorporation of safety margins, and performance history are used, to (1) focus attention on the most important activities, (2) establish objective criteria for evaluating performance, (3) develop measurable or calculable parameters for monitoring system and licensee performance, (4) provide flexibility to determine how to meet the established performance criteria in a way that will encourage and reward improved outcomes, and (5) focus on the results as the primary basis for regulatory decision-making.

Ibid.

I am concerned that the position taken by my colleagues and the Staff on Citizens' motion is not consistent with NRC policy and in particular with the concept of defense-in-depth. Defense-in-depth requires the use of multiple layers to ensure safety. In its most general form, defense-in-depth has three layers or levels. The first is prevention achieved in part through the use of high reliability components and the use of safety margins. The second level is protection through the use of protection systems to detect abnormal conditions. The third level, mitigation, relies on the use of engineered safety systems such as the ECCS.

The Staff assessment ignores the first level and relies on the second and third level thus defeating the whole concept of defense-in-depth. I cannot agree and consider that if the concept of Risk-Informed, Performance-Based regulation is to have any meaning, then all of its components, including defense-in-depth, must be considered.

From this I conclude, that without a clear understanding of what the CUF is for the recirculation nozzle, one cannot meet the first level of defense-in-depth and that relying on the ECCS to ensure safety introduces an unacceptable non-conservatism that is inconsistent with established Commission policy and nuclear safety regulation.

Finally, I find the Majority employs a conclusory analysis in analyzing whether under 10 C.F.R. § 2.326(a)(3) the motion demonstrated that a materially different result would occur. As explained by the Commission in the statement of considerations for 10 C.F.R. § 2.326(a)(3):

> The actual inquiry to be performed falls between the two standards. The "would" standard may be read to imply that an ultimate conclusion must be reached before all evidence is considered. The "might" standard implies that reopening could be ordered even where a board is uncertain whether or not the new evidence is important. The inquiry should be, and has been, the likelihood that a different result will be reached if the information is considered.

51 Fed. Reg. 19,535-01, 19,537 (May 30, 1986). The Majority bases its conclusion that the outcome would likely not be materially different if the new information were considered by comparing the "evidence" submitted by Citizens and both AmerGen and the NRC Staff.[10] See Majority at 20. This leads the Majority to conclude that the evidence by AmerGen and the Staff "fortifies our conclusion that, on this record, a materially different result is not likely" (id. at 22). The Majority does not explain how or why this would be so, and fails to take into account the full basis of Citizens' contention in reaching its conclusion.

In that regard, my colleagues appear to want a complete finite element analysis of the nozzle by Citizens that would show the CUF is greater than 1 for the 60 year life. While highly desirable, it is impossible for Citizens at this point in the proceeding to perform an analysis to determine the CUF since it would require access to proprietary information that at this stage of the proceeding they are not now entitled to. Citizens did in fact request a copy of the AmerGen analysis but AmerGen declined to provide it since discovery is not permitted in the present circumstances. See Citizens' May 27 Response and Motion to Supplement at 3 n.1. As a consequence, Citizens must base their motion on what is available in the public record, which

[10] "It is clear that neither we nor a licensing board may base a decision on factual material which has not been introduced into evidence. This rule is both traditional and just. It would have been unfair to the parties on the opposite side of the case for the Licensing Board to have given probative weight to extra-record material because that would have deprived them of an opportunity to impeach it by cross-examination or to rebut it with other evidence. For the same reason, we may not rely on it." Tennessee Valley Authority (Hartsville Nuclear Plant, Units 1A, 2A, 1B, and 2B), ALAB-463, 7 NRC 371, 352 (1978) (internal citations omitted).

they have done. To require more of an intervenor would make it virtually impossible to ever reopen a proceeding no matter how safety significant an issue raised in a contention might be and turn 10 C.F.R. § 2.326 into an academic exercise. A situation that I am sure my colleagues would not support. Citizens have used the publicly available information to call into question the reanalysis performed by AmerGen. In their pleading, Citizens point out that "to be certain that an analysis is conservative, the analyst should ensure that each assumption going into the analysis is justified by the actual conditions" (Second Hopenfeld Decl. ¶ 4). Citizens show that "in the original analysis, the nozzle cladding was taken into account . . . while in the reanalysis it was neglected" (ibid.). From a technical standpoint, more analysis would most likely be needed in order to determine what effect this could have on the calculation of the CUF.

Additional analysis would likely result in a change in the outcome of the prior proceeding based on Citizens' new evidence for the following reasons. The cladding is added to the base metal because of its corrosion resistance and it adds material to the thickness of the nozzle. Thus, it would increase the load carrying capability of the nozzle. If that were the sole effect, then omitting the cladding, as was done by AmerGen, would increase the calculated stress increasing the CUF resulting in a conservative calculation. However, the loads on the nozzle are caused by abrupt changes in the fluid temperature inside the nozzle. These changes cause the materials to expand or contract. Since the cladding is a different material than the base metal, it has a different coefficient of thermal expansion and will expand and contract a different amount compared to the base metal. This adds to the stress in the nozzle, increasing the usage factor. Omitting the cladding would result in a non-conservative estimate of the CUF. But, without a detailed analysis both with and without the cladding, one cannot a priori determine the effect that dominates and thus one does not know necessarily if the new finite element analysis is conservative or non-conservative. Indeed, since the original analysis included the cladding, it is not possible to judge whether the new analysis is more or less conservative than the original analysis. Citizens rightly point out that "key assumptions must . . .

be carefully justified to prevent the CUF_{EN} analysis [from] becoming an outcome-driven exercise" (Citizens' May 27 Motion Response and Motion to Supplement at 7).

I conclude that the new information proffered by Citizens' evidence has properly raised an issue of serious safety significance that would likely lead to a different outcome in the proceeding had it been considered previously, namely by providing the basis for adding requirements into the license relative to the AmerGen's aging management plan, such as periodic inspections of the recirculation line nozzles for cracks.[11]

It is unclear how the Majority can conclude that the new information raising a matter of serious safety significance can be of such a nature that it would not have had a material outcome on the prior proceeding.[12] The Commission, in its final statement in the ECCS rulemaking proceeding explained:

> Protection of the public health and safety from radiological effects is a statutory responsibility of the AEC under the Atomic Energy Act and has always been foremost in its Regulatory program. Protection against a highly unlikely loss-of-coolant accident has long been an essential part of the defense-in-depth concept used by the nuclear power industry and the AEC to assure the safety of nuclear power plants.

Rulemaking Hearing Acceptance Criteria for Emergency Core Cooling Systems for Light-Water-Cooled Nuclear Power Reactors, CLI-73-39, 6 AEC 1085, 1091 (1973). At the very least, the license renewal should be granted, conditioned on AmerGen performing an analysis that includes the cladding and demonstrating that this new analysis produces a CUF that is less than or equal to the analysis in question. Only then can we be sure that the CUF has been bounded.

---

[11] The nozzle is currently in the AmerGen's AMP and monitored under it. See Safety Evaluation Report at 747 (August 2006) (ADAMS Accession No. ML062300330).

[12] It is self-evident that the addition of a condition on a license to operate would constitute a "materially different result" warranting reopening. In Arizona Public Service Co. (Palo Verde Nuclear Generating Station, Units 1 and 2), LBP-82-117B, 16 NRC 2024, 2032 (1982), the Board found that the record on the new information presented was sparse and that "[h]ad further information been made available before the close of the hearing, we would have incorporated it into the record." The Board decided to reopen the case to explore the new information presented by Intervenors, deciding that if the new information were to prove a grave safety threat, then a condition on the license would have to result (ibid.).

Lastly, as my colleagues correctly point out "Citizens must also have demonstrated both that their motion is timely (10 C.F.R. § 2.326(a)(1)) and that they satisfy the balancing test in 10 C.F.R. § 2.309(c)(1) as required by section 2.326(d)" (Majority at 26). Section 2.309(c)(1) requires the movant to show that a balancing of the following factors (to the extent they are relevant to the particular filing) weighs in favor of reopening:

> (i) Good cause, if any, for the failure to file on time;
>
> (ii) The nature of the . . . petitioner's right . . . to be made a party of the proceeding;
>
> (iii) The nature and extent of the . . . petitioner's property, financial or other interest in the proceeding;
>
> (iv) The possible effect of any order that may be entered in the proceeding on the . . . petitioner's interest;
>
> (v) The availability of other means whereby the . . . petitioner's interest will be protected;
>
> (vi) The extent to which the . . . petitioner's interests will be represented by existing parties;
>
> (vii) The extent to which the . . . petitioner's participation will broaden the issues or delay the proceeding; and
>
> (viii) The extent to which the . . . petitioner's participation may reasonably be expected to assist in developing a sound record.

10 C.F.R. § 2.309(c)(1). Having already addressed the timeliness issue associated with factor(i), see supra pp. 5-8, I turn to the remaining factors.

Since Citizens already are participants in this proceeding, they clearly satisfy factors (ii), (iii), and (vi). Relative to item (iv), it is apparent that Citizens' interest in this proceeding, i.e., in seeing that the LRA for Oyster Creek is granted only if there is such assurance that the facility would be operated consistent with aging requirements, would be affected by an order issued relative to the CUF matter.

The underlying concept of license renewal is the need to perform a time limited aging analysis ("TLAA"). TLAA is performed on every Structure, System and Component ("SSC") subject to the requirement. That does not, however, demand that the TLAA must "demonstrate"

that the SSCs are all found to be acceptable throughout the license extension. Rather, it simply requires that a TLAA adequately identify the components that may fail to perform their function due to aging during the period of extended operation. The analysis enables the Licensee to develop an aging management plan ("AMP") which lays out how those potential problem components will be managed, reviewed and, if needed, corrected during the period of extended operation. The methods employed can range from future testing and monitoring, inspection and analysis, to the extreme of complete replacement; all of which could also be required as an outcome of an adjudicatory proceeding in front of the licensing boards.

In this case, the subject component has come into question because of a high fatigue usage factor and a questionable analysis. Citizens correctly question whether the usage factor has been conservatively determined. Thus, we are still at the stage of performing the TLAA. The outcome will be determined once a sound, conservative analysis is performed. Thus the impact on the petitioners' interest may simply be the production of an acceptable analysis by AmerGen that shows the CUF to be less than 1.0 or that the CUF is greater than 1.0. In the former case, the case would be ripe for summary disposition. In the latter case, the applicant would then need to submit a modification to the AMP for the component that might simply include additional inspections, making it ripe for summary disposition.

Additionally, as to factor (vii), given that the existing Oyster Creek license does not expire until April 2009, and the current plant licensing would remain in effect pending final outcome of any hearing, see 10 C.F.R. § 54.31(c), the impact of granting the reopening motion and admitting the contention would most certainly be minimal since a reanalysis and summary disposition motion should be able to be done in 30 to 60 days. Regarding factor (viii), it is clear that placing the analysis and its conclusions in the record will provide a much improved record documenting this serious issue.

Finally, regarding factor (v), the protection afforded to the petitioner's interest by the increased scrutiny that the CUF analysis would receive as a result of admission of the new

contention cannot be obtained in any other way. In Houston Lighting & Power Co. (South Texas Project, Units 1 & 2), ALAB-799, 21 NRC 360, 384 n.108 (1985), the Appeal Board cautioned the NRC Staff's involvement in a proceeding is not synonymous with protection of Intervenor's rights and interests afforded by the hearing process under the balancing test now incorporated in 10 C.F.R. § 2.309. The Appeal Board noted:

> Washington Public Power Supply System (WPPSS Nuclear Project No. 3), ALAB-747, 18 NRC 1167 (1983) . . . we determined that the participation of the NRC staff in a licensing proceeding was not tantamount to participation by a private intervenor. By analogy, the availability of staff review outside the hearing process generally does not constitute adequate protection of a private party's rights when considering factor two.

Ibid.

As correctly outlined by the Majority, the standards for reopening the record are indeed demanding. But, 10 C.F.R. § 2.326 was enacted with the goal of maintaining the “finality” of the hearing process while still enabling participants to bring to light new post-hearing information concerning significant safety situations. Citizens have shown they have met the standards for reopening, in a timely motion addressing a serious safety issue. To deny Citizens’ motion and eliminate their access to the only means that will allow them to confront what appears to be a significant safety issue would be a grave error.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
	)	
AMERGEN ENERGY COMPANY, LLC	)	Docket No. 50-219-LR
	)	
	)	
(Oyster Creek Nuclear Generating Station)	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing LB MEMORANDUM AND ORDER (DENYING CITIZENS' MOTION TO REOPEN THE RECORD AND TO ADD A NEW CONTENTION) (LBP-08-12) have been served upon the following persons by U.S. mail, first class, or through NRC internal distribution.

Office of Commission Appellate Adjudication
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Administrative Judge
E. Roy Hawkens, Chair
Atomic Safety and Licensing Board Panel
Mail Stop - T-3 F23
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

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

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

Mary C. Baty, Esq.
James E. Adler, Esq.
Brian Newell, Paralegal
Office of the General Counsel
Mail Stop - O-15 D21
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Richard Webster, Esq.
Julia LeMense, Esq.
Eastern Environmental Law Center
744 Broad Street, Suite 1525
Newark, NJ 07102

Paul Gunter, Reactor Oversight
Kevin Kamps
Beyond Nuclear
Nuclear Policy Research Institute
6930 Carroll Avenue, Suite 400
Takoma Park, MD 20912

Donald J. Silverman, Esq.
Kathryn M. Sutton, Esq.
Alex S. Polonsky, Esq.
Raphael P. Kuyler, Esq.
Morgan, Lewis & Bockius LLP
1111 Pennsyvlania Ave., NW
Washington, DC 20004

Docket No. 50-219-LR
LB MEMORANDUM AND ORDER (DENYING CITIZENS' MOTION TO REOPEN THE RECORD AND TO ADD A NEW CONTENTION) (LBP-08-12)

Bradley M. Campbell, Commissioner
New Jersey Department of
Environmental Protection
P.O. Box 402
Trenton, NJ 08625-0402

Jill Lipoti, Director
New Jersey Department of
Environmental Protection
Division of Environmental Safety and Health
P.O. Box 424
Trenton, NJ 08625-0424

Ron Zak
New Jersey Department of
Environmental Protection
Nuclear Engineering
P.O. Box 415
Trenton, NJ 08625-0415

J. Bradley Fewell, Esq.
Exelon Corporation
4300 Warrenville Road
Warrenville, IL 60555

Suzanne Leta
NJPIRG
11 N. Willow St.
Trenton, NJ 08608

John A. Covino, Esq.
Ellen Barney Balint, Esq.
Valerie Anne Gray, Esq.
Caroline Stahl, Esq.
Deputy Attorneys General
New Jersey Office of the Attorney General
Environmental Permitting &
Counseling Section
Division of Law
Hughes Justice Complex
P.O. Box 093
Trenton, NJ 08625

[Original signed by Christine M. Pierpoint]

Office of the Secretary of the Commission

Dated at Rockville, Maryland
this 24th day of July 2008