

RAS-E-23

March 5, 2008

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION  
ATOMIC SAFETY AND LICENSING BOARD

DOCKETED  
USNRC

March 6, 2008 (9:00am)

Before Administrative Judges:  
Lawrence G. McDade, Chairman  
Dr. Richard E. Wardwell  
Dr. Kaye D. Lathrop

OFFICE OF SECRETARY  
RULEMAKINGS AND  
ADJUDICATIONS STAFF

In the Matter of )

Entergy Nuclear Operations, Inc. )  
(Indian Point Nuclear Generating )  
Units 2 and 3) )

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

**RIVERKEEPER, INC.'S REQUEST FOR ADMISSION  
OF AMENDED CONTENTION 6**

**I. INTRODUCTION**

Pursuant to 10 C.F.R. § 2.309(f)(2), Riverkeeper, Inc., hereby seeks leave to amend Contention TC-1, which challenges the adequacy of Entergy Nuclear Operations, Inc.'s ("Entergy's") license renewal application ("LRA"), as recently amended, to satisfy NRC regulations for the management of aging equipment. The contention is supported by the attached Declaration of Dr. Joram Hopfenfeld in Support of Riverkeeper's Amended Contention TC-1 (March 4, 2008).

Amended Contention TC-1 contention meets the timeliness requirements of 10 C.F.R. §§ 2.309(f)(i) - (iii), because it is based on new information, materially different from the information presented in Entergy's original LRA, that became available to Riverkeeper within the last 30 days via Entergy's second amendment to its LRA. *See*

TEMPLATE = SECY-037

SECY-02

Letter from Fred R. Dacimo, Entergy to U.S. Nuclear Regulatory Commission, "Subject: License Application Amendment 2" (Entergy Letter NL-08-021) (January 22, 2008) ("LRA Amendment 2")). LRA Amendment 2 was posted on the U.S. Nuclear Regulatory Commission's ("NRC's" or "Commission's") Agency-wide Document Access Management System ("ADAMS") 30 days ago, on February 6, 2008. *Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-07-15, 66 NRC 261, 266 n.11 (2007) (noting that many Atomic Safety and Licensing Board ("ASLB") panels, including the Vermont Yankee panel, have found that 30 days is a reasonable period for filing new contentions).

## **II. BACKGROUND**

As submitted by Riverkeeper on November 30, 2007, Contention TC-1 asserts that Entergy's LRA fails to satisfy 10 C.F.R. § 54.21(c)(1) in the following respects:

1. Tables 4.3-13 and 4.3-14 identify four representative reactor coolant components for which Entergy's evaluation of Time Limited Aging Analyses ("TLAAs") is facially non-compliant with the standard of 10 C.F.R. § 54.21(c)(i)-(ii) for avoiding a demonstration, under 10 C.F.R. § 54.21(c)(iii), that it will adequately manage the effects of aging on the intended functions of the components during the license renewal term. For these four components – pressurizer surge line piping (IP2 & IP3), the RCS piping charging system nozzle (IP2), and pressurizer surge line nozzles (IP3) – the environmentally adjusted cumulative usage factor ("CUF) estimated by Entergy exceeds the regulatory threshold for submitting an aging management program. Yet, Entergy has failed to broaden its TLAA analysis beyond the scope of the representative components identified in Tables 4.3-13 and 4.3-14 to identify other components whose CUF may be greater than one; nor has it submitted any demonstration that it will adequately manage the aging of components with a CUF greater than one. Therefore Entergy's LRA does not satisfy 10 C.F.R. §§ 54.21(c) or (c)(iii).

2. Entergy's list of components with CUFs of less than one in Tables 4.3 -13 and 4.3-14 is incomplete, because Entergy's methods and assumptions for identifying those components are unrealistic and inadequate.

3. For a number of other components subject to the license renewal regulations, which are listed in Tables 4.3-3 through 4.3-12, Entergy has also failed to perform complete TLAAAs. The TLAAAs for these components are incomplete because they omit consideration of the exacerbating effects of environmental conditions on the fatigue of metal components. Therefore Entergy has failed to satisfy 10 C.F.R. § 54.21(c)(1)(i)-(ii). Nor has Entergy submitted an aging management program for these components, as required by 10 C.F.R. § 54.21(c)(1)(iii).

Riverkeeper, Inc.'s Request for Hearing and Petition to Intervene in the License Renewal Proceeding for the Indian Point Nuclear Power Plant at 7 (November 30, 2007)

("Riverkeeper Hearing Request"). Riverkeeper does not seek to withdraw any portion of Contention TC-1, but rather to amend the basis to Subpart 1 of the contention to address the reasons that Entergy's LRA Amendment 2 does not cure Entergy's failure to demonstrate that it will adequately manage the aging of components with a CUF greater than one.<sup>1</sup>

### **III. AMENDED CONTENTION TC-1: INADEQUATE TIME LIMITED AGING ANALYSES AND FAILURE TO DEMONSTRATE THAT AGING WILL BE MANAGED SAFELY**

Riverkeeper amends the basis statement regarding the "Inadequacy of Entergy's Aging Analysis" (Riverkeeper's Hearing Request at 12-15) as follows:

In Section 4.3 of its LRA, Entergy acknowledges that its Time Limited Aging Analyses ("TLAAAs") for selected representative components show the environmentally adjusted cumulative usage factors ("CUFs") for a number of components will exceed one during the license renewal term. *See* LRA at 4.3-22 and Tables 4.3-13, 4.3-14.

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<sup>1</sup> On March 4, 2008, the NRC Staff wrote a letter to the ASLB stating that it considers Riverkeeper's Contention TC-1 to be moot in light of LRA Amendment 2. Letter from David E. Roth and Kimberly A. Sexton to Lawrence G. McDade, Kay Lathrop, and Richard E. Wardwell. Riverkeeper disagrees with the Staff's conclusion, and does not consider Contention TC-1 to be moot in any respect.

Therefore, on their faces, the TLAAs for these components do not satisfy 10 C.F.R. §§ 54.21(c)(1)(i) or (ii). As a result, Entergy must “demonstrate that the effects of aging on the intended function(s) will be adequately managed for the period of extended operation.” 10 C.F.R. § 54.21(c)(1)(iii).

In its original LRA, Entergy provided no information about how it will manage the effects of aging. *See* Riverkeeper Hearing Request at 12. Instead, the LRA stated that Entergy will choose among three options: (a) “[r]efine” the fatigue analysis to determine CUFs less than one, (b) “[m]anage” the effects of aging by an inspection program, or (c) “[r]epair or replace the affected locations before exceeding a CUF of 1.0.” LRA at 4.3-22. As discussed in Riverkeeper’s Hearing Request, none of these options satisfies the regulations. *Id.* at 12-13.

In LRA Amendment 2, Entergy purports to provide additional information regarding its aging management program, but in reality it does not make any meaningful changes to options (a), (b), and (c). For option (a), Entergy states that it will “update fatigue analyses” for components in Tables 4.3-13 and 4.3-14 with CUFs less than one, in a manner that is consistent with its “Fatigue Monitoring Program, Detection of Aging Effects.” LRA Amendment 2, Attachment 1 at 1. But Entergy does not explain why it is likely that CUFs that are now above one are likely to be less than one when re-calculated. *See* Riverkeeper’s Hearing Request at 13, Riverkeeper’s Reply to Entergy’s and NRC Staff’s Responses to Hearing Request and Petition to Intervene at 5 (February 15, 2008) (“Riverkeeper’s Reply”). Nor does Entergy address the legal requirement that the LRA application itself is required to demonstrate that CUFs for representative components are

less than one, not that it is possible that results of future re-calculations may be less than one. See Riverkeeper's Hearing Request at 12, Riverkeeper's Reply at 6. Finally, Entergy fails to address NRC guidance requiring that if CUFs for representative components in the license renewal application are more than one, the applicant must evaluate all components that are subject to the effects of aging. See Riverkeeper's Hearing Request at 14-15, citing NUREG-1801, Rev. 1, *Generic Aging Lessons Learned Report*, Vol. 2 at X M-1 – X- M-2 (2005) ("Gall Report"); Electric Power Research Institute, *Material Reliability Program: Guidelines for Addressing Fatigue Environmental Effects in a License Renewal Application* Revision 1, at 3-4 (2005) ("MRP-47").

Entergy's LRA Amendment 2 also limits the recalculation of CUFs to locations specified in Tables 4.3-13 and 4.3.14, rather than including the six representative locations identified in NUREG/CR-6260, *Application of NUREG-CR-5999 Interim Fatigue Curves to Selected Nuclear Power Plant Components* (February 1995) ("NUREG/CR-6260"). LRA Amendment 2, Attachment 1 at 1. The changes to the LRA are marked in Amendment 2 as follows:

~~For locations in LRA Table 4.3-13 (IP 2) and 4.3-13 (IP 3), including NUREG/CR-6260 locations, with existing fatigue analysis valid for the period of extended operation, use the existing CUF to determine the environmentally-adjusted CUF.~~

LRA Amendment 2, Attachment 1 at 1. Thus, for five locations for which Entergy now lacks plant-specific CUFs -- the RCS piping safety injection nozzle and RHR Class 1 piping at Unit 2 (Table 4.3-13) and the RCS piping charging system nozzle, RCS piping safety injection nozzle, and RHR Class 1 piping at Unit 3 (Table 4-3-14) -- Entergy

proposes to drop its commitment to calculate CUFs at any time in the future.

By deleting from the LRA a commitment to evaluate CUFs for all six NUREG/CR-6260 locations, Entergy fails to satisfy NRC guidance and regulations for managing aging components. As discussed in Riverkeeper's Hearing Request at 10-11, NUREG/CR-6260 lists examples of critical locations that should be evaluated in aging analyses. These components were selected "to give a representative overview of components that had higher CUFs and/or were important from a risk perspective." NUREG/CR-6260 at 4-1. For this reason the GALL Report requires that an "acceptable" aging management program must perform fatigue calculations for all six NUREG/CR-6260 locations. *Id.* at X M-1. Failing to calculate CUFs for any one of the NUREG/CR-6260 locations would be inconsistent with the Gall Report, and therefore would also demonstrate that Entergy had failed to satisfy NRC safety regulations. *Louisiana Energy Services* (Claiborne Enrichment Center), LBP-91-41, 34 NRC 332, 338 (1991), citing *Carolina Power and Light Co.* (Shearon Harris Nuclear Power Plant), ALAB-852, 24 NRC 532, 544-45 (1986) (recognizing that because regulatory guides reflect the "considered judgment of Staff and offer insight on what is needed to satisfy a regulation," they constitute "evidence of legitimate means for complying with regulatory requirements.")

Like Entergy's original LRA, Amendment 2 continues to be unacceptably vague about Entergy's plans for improving its methodology for calculating CUFs or its criteria for repairing or replacing components. The original LRA made a general statement that affected locations would be repaired or replaced before exceeding a CUF of one. LRA at

4.3-22. LRA Amendment 2 adds little substantive information. The amendment states that Entergy will comply with the “Fatigue Monitoring Program, Corrective Actions” in repairing or replacing components. LRA Amendment 2, Attachment 1 at 2. LRA Amendment 2 also provides a revised description of its “Fatigue Monitoring Program” which includes the following description of Entergy’s proposed corrective actions:

The program requires corrective actions including repair or replacement of affected components before fatigue usage calculations determine the CUF exceeds 1.0. Specific corrective actions are implemented in accordance with the IPEC corrective action program. Repair or replacement of the affected component(s), if necessary, will be in accordance with established plant procedures governing repair and replacement activities. These established procedures are governed by Entergy’s 10 CFR 50 Appendix B QA program and meet the applicable repair or replacement requirements of the ASME Code Section XI.

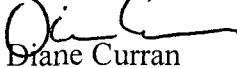
LRA Amendment 2, Attachment 1 at 2.

This description of Entergy’s proposed corrective actions is unacceptably vague, because it does not provide any information regarding how Entergy will develop a credible and acceptable methodology for calculating CUFs, or Entergy’s criteria for repairing or replacing equipment. It is not sufficient to merely presume that these things will happen; they should be described sufficiently in the LRA so that the adequacy of Entergy’s program can be evaluated. *Entergy Nuclear Vermont Yankee L.L.C. and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LBP-06-20, 64 NRC 131, 186 (2006) (ruling that an aging management program must provide sufficient detail to “demonstrate” that the applicant “will” adequately manage aging of equipment; and that it is not sufficient to merely “summarize options for future plans”).

#### IV. CONCLUSION

For the foregoing reasons, the ASLB should admit Amended Contention TC-1.

Respectfully submitted,



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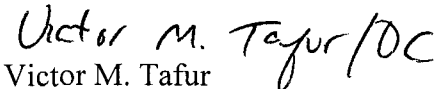
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March 5, 2008



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Docket Nos.  
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3. In addition, I have assisted Riverkeeper with the preparation of Amended Contention TC-1. The factual statements in Amended Contention TC-1 are true and correct to the best of my knowledge, and the expressions of opinion in Amended Contention TC-1 are based on my best professional judgment.

March 4, 2008

## CERTIFICATE OF SERVICE

I certify that on March 5, 2008, copies of the foregoing letter from Riverkeeper, Inc.'s Request for Admission of Amended Contention 6 were served on the following by e-mail and first-class mail:

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