

**UNITED STATES
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD**

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In re: Docket Nos. 50-247-LR; 50-286-LR

License Renewal Application Submitted by ASLBP No. 07-858-03-LR-BD01

Entergy Nuclear Indian Point 2, LLC, DPR-26, DPR-64
Entergy Nuclear Indian Point 3, LLC, and
Entergy Nuclear Operations, Inc. February 13, 2015
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**STATE OF NEW YORK AND RIVERKEEPER'S
JOINT MOTION FOR LEAVE TO
SUPPLEMENT PREVIOUSLY-ADMITTED
JOINT CONTENTION NYS-38/RK-TC-5**

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TABLE OF CONTENTS

	Page
I. BACKGROUND AND PROCEDURAL HISTORY.....	2
II. THIS MOTION IS TIMELY UNDER FORMER 10 C.F.R. § 2.309(f)(2).....	4
III. THE ADDITIONAL BASES MEET ALL THE REQUIREMENTS OF FORMER 10 C.F.R. § 2.309(f)(2).....	5
IV. THE NEW BASES MEET THE RELEVANT REQUIREMENTS OF 10 C.F.R. § 2.309(f)(1)	6
1. The Bases Are Within the Scope of License Renewal – 10 C.F.R. § 2.309(f)(1)(iii)	6
2. The Issues Raised Are Material to the Findings that the NRC Must Make to Grant Entergy’s Request for a License Renewal – 10 C.F.R. § 2.309(f)(1)(iv)	8
3. Adequate Bases Have Benn Provided for the Contention – 10 C.F.R. § 2.309(f)(1)(ii)	8
4. Concise Statement of Facts and Expert Opinion Supporting the Contention – 10 C.F.R. § 2.309(f)(1)(v)	8
5. A Genuine Dispute Exists with the Applicant on Material Issues of Law or Fact – 10 C.F.R. § 2.309(f)(1)(vi)	9
V. CONCLUSION.....	10

The State of New York and Riverkeeper, through their undersigned counsels, submit this joint motion for leave to file additional bases in support of previously-admitted joint contention NYS-38/RK-TC-5, pursuant to former 10 C.F.R. § 2.309(f),¹ the Scheduling Order of the Atomic Safety and Licensing Board (the Board) dated July 1, 2010, and the subsequent Orders and instructions of the Board. The additional bases are based on Supplement 2 to NUREG-1930 the “Safety Evaluation Report Related to the License Renewal of Indian Point Nuclear Generating Unit Nos. 2 and 3” (SSER2), which evaluated and approved Entergy’s February 2012 “Revised Reactor Vessel Internals Program and Inspection Plan” (NL-12-037), as modified over a 32-month period by Entergy’s responses to various requests for additional information (RAIs) from NRC Staff (collectively, “the Amended and Revised RVI Plan”). Entergy developed and submitted the Amended and Revised RVI Plan for NRC Staff review and approval as a plan for managing the effects of aging on reactor vessel internals (RVIs) at Entergy’s two operating nuclear facilities at Indian Point (IP2 and IP3) during their requested additional 20-year period of extended operations.

The State and Riverkeeper have consulted with the parties concerning this motion. Entergy and NRC Staff do not oppose intervenors’ ability to present this motion and reserve their ability to respond to the substance of the proffered supplemental bases. Clearwater does not oppose the motion.

¹ Although motions to amend or submit new contentions are now governed by 10 C.F.R. § 2.309(c), the Board has ordered that its July 1, 2010 scheduling order, which referenced 10 C.F.R. § 2.309(f), as modified by subsequent orders, should continue to apply in this proceeding notwithstanding the subsequent promulgation of a revised version of 10 C.F.R. Part 2. *Entergy Nuclear Operations, Inc.* (Indian Point Nuclear Generating Units 2 and 3), Order (Aug. 8, 2012). The substantive requirements of current subsection (c) and former subsection (f) are essentially the same. This motion for leave to supplement is also appropriate under current 10 C.F.R. § 2.309(c).

I. BACKGROUND AND PROCEDURAL HISTORY

The State of New York's and Riverkeeper's Joint Contention NYS-38/RK-TC-5 states:

Entergy is not in compliance with the requirements of 10 C.F.R. §§ 54.21(a)(3) and (c)(1)(iii) and the requirements of 42 U.S.C. §§ 2133(b) and (d) and 2232(a) because Entergy does not demonstrate that it has a program that will manage the affects of aging of several critical components or systems and thus NRC does not have a record and a rational basis upon which it can determine whether to grant a renewed license to Entergy as required by the Administrative Procedure Act.

The Board admitted joint contention NYS-38/RK-TC-5, over objections from Entergy and NRC Staff, in November 2011. *Entergy Nuclear Operations, Inc.* (Indian Point Nuclear Generating Units 2 and 3), Memorandum and Order (Admitting New Contention NYS-38/RK-TC-5) (Nov. 10, 2011). "NYS-38/RK-TC-5 is a broadly worded contention questioning whether Entergy 'has a program that will manage the affects of aging of several critical components or systems' and whether the proffered programs provide an adequate 'record and rational basis [to the NRC] upon which it can determine whether to grant a renewed license to Entergy.'" *Entergy Nuclear Operations, Inc.* (Indian Point Nuclear Generating Units 2 and 3), Order (Granting Entergy's Motion for Clarification of Licensing Board Memorandum and Order Admitting Contentions NYS-38/RK-TC-5) at 2 (Dec. 12, 2011).

As a result of a dispute between the State of New York and NRC Staff relating to mandatory disclosures, the Board placed joint contention NYS-38/RK-TC-5 on a separate evidentiary track from the previous contentions, and ordered that contention be "held in abeyance" pending further order from the Board. *Entergy Nuclear Operations, Inc.* (Indian Point Nuclear Generating Units 2 and 3), Order (Dec. 14, 2011), at 2 (ML11348A032). Shortly thereafter, NRC Staff notified the Board and the parties that Entergy intended to submit "additional information regarding its Reactor Vessel Internal Aging Management Program and

Inspection Plan.” NRC Staff letter to ASLB from Sherwin Turk, Staff Counsel (Jan. 27, 2012) (ML12027A115). NRC Staff noted that it expected to submit RAIs in response to Entergy’s submittal, and that the Staff’s review of the submittal might “be the subject of a Supplement to the Safety Evaluation Report” on the renewal application. *Id.* As a result, the Board agreed to add Contention NYS-25, which relates to Entergy’s proposed AMP for RVIs, to the “the second hearing track that already includes NYS-38/RK-TC-5[.]” *Entergy Nuclear Operations, Inc.* (Indian Point Nuclear Generating Units 2 and 3), Order (Feb. 16, 2012), at 2 (ML12047A308). The Board subsequently ruled on the disclosure dispute between NRC Staff and the State, and established a schedule to bring Joint Contention NYS-38/RK-TC-5 “in line with the other contentions on track for the first round of the evidentiary hearing[.]” *Entergy Nuclear Operations, Inc.* (Indian Point Nuclear Generating Units 2 and 3), Order (March 16, 2012), at 12 (ML12076A156).

In an April 2012 teleconference, NRC Staff noted that the SSER2 would implicate Contention NYS-25 and Joint Contention NYS-38/RK-TC-5, and the Board stated that a schedule for filing new or amended contentions arising out of the nascent SSER2 would not be set until the document was released. Teleconference Transcript (April 4, 2012), at 1109-10 (Judge McDade). Following questions by some parties, the Board stated that the “RVI aspects” of NYS-38/RK-TC-5 – also described as the aspects of NYS-38/RK-TC-5 “that relate to NYS-25” – would be “deferred until the NRC Staff releases the [SSER2] and litigation resumes on NYS-25[.]” *Entergy Nuclear Operations, Inc.* (Indian Point Nuclear Generating Units 2 and 3), Order (Apr. 23, 2012), at 6-7. Accordingly, the State of New York and Riverkeeper submitted pre-filed direct and rebuttal testimony in support of the “non-RVI” aspects of joint contention NYS-38/RK-TC-5 in 2012. *See, e.g.,* Pre-filed Direct Testimony of Dr. Lahey Regarding

Contention NYS-38/RK-TC-5 (June 18, 2012); Pre-filed Rebuttal Testimony of Dr. Lahey Regarding Contention NYS-38/RK-TC-5 (Nov. 9, 2012); Pre-filed Testimony of Dr. Hopenfeld Regarding Contention NYS-38/RK-TC-5 (June 19, 2012); Pre-filed Rebuttal Testimony of Dr. Hopenfeld Regarding Contention NYS-38/RK-TC-5 (Nov. 9, 2012); Pre-filed Direct Testimony of Dr. Duquette Regarding Contention NYS-38/RK-TC-5 (June 14, 2012); Pre-filed Rebuttal Testimony of Dr. Duquette Regarding Contention NYS-38/RK-TC-5 (Nov. 8, 2012).

A subsequent teleconference confirmed that a hearing on Contention NYS-25, Consolidated Contention NYS-26B/RK-TC-1B, and Joint Contention NYS-38/RK-TC-5 would be held in abeyance until the SSER2 was released. *See* Teleconference Transcript (June 10, 2013), at 4531-35. As the release of SSER2 neared – after 30 months of communications between NRC Staff and Entergy – the Board assured the State of New York that “given how long it has taken the professional staff of the agency to review this, . . . we would be predisposed to giving the State any reasonable request for time in which to resolve this.” Teleconference Transcript (July 17, 2014), at 4611 (Judge McDade).

II. THIS MOTION IS TIMELY UNDER FORMER 10 C.F.R. § 2.309(f)(2)

The new bases in support of Joint Contention NYS-38/RK-TC-5 – as well as the supporting evidence and declarations of Dr. Richard Lahey and Dr. Joram Hopenfeld that accompany the new bases – are based on Entergy’s Amended and Revised RVI Plan, as approved by NRC Staff in the November 2014 SSER2. As discussed above, Joint Contention NYS-38/RK-TC-5 had been held in abeyance pending the release of SSER2, and the Board specifically contemplated that the parties would wait until the release of SSER2 before filing new or amended contentions based on that document or the underlying submissions from Entergy, at which point the parties would have a reasonable amount of time to develop and

prepare responses. The SSER2 was made publicly available on November 10, 2014 and the Board set a deadline of February 9, 2015 for “new or amended contention arising from the publication of SSER 2.” *Entergy Nuclear Operations, Inc.* (Indian Point Nuclear Generating Units 2 and 3), Revised Scheduling Order (Dec. 9, 2014), at 2. The Board later extended this deadline to February 13, 2015. *Entergy Nuclear Operations, Inc.* (Indian Point Nuclear Generating Units 2 and 3), Order (Feb. 6, 2015). The proposed additional bases are being submitted in accordance with the schedule set forth in the Board’s scheduling orders, and accordingly are timely.

III. THE ADDITIONAL BASES MEET ALL THE REQUIREMENTS OF FORMER 10 C.F.R. § 2.309(f)(2)

The amended contention meets the requirements of former 10 C.F.R. § 2.309(f)(2) inasmuch as it is (1) based on information that was not previously available, (2) based on information that is materially different than information previously available, and (3) has been submitted in a timely fashion based on the availability of the subsequent information.² As previously discussed, the additional bases are being submitted in accordance with the schedule established by the Board, and are therefore timely. The additional bases also meet the other requirements of the regulation and the Board’s July 1, 2010 Scheduling Order.

The additional bases relate to the contents and conclusions of Entergy’s Amended and Revised RVI Plan, as well as the contents and conclusions of the SSER2, which approved Entergy’s Amended and Revised RVI Plan. The Amended and Revised RVI Plan substantially modified and replaced Entergy’s previously-proposed approach relating to RVIs. Moreover, the SSER2 revealed for the first time that NRC Staff would accept Entergy’s current proposal to manage the combined and synergistic effects of various aging mechanisms on RVIs through

² These requirements are substantially identical to the requirements of current 10 C.F.R. § 2.309(c), which this Motion also fulfills.

periodic inspections, rather than preventative actions. Additionally, the release of the SSER2 revealed that NRC would accept Entergy's continued reliance on NUREG/CR-5704 and NUREG/CR-6909 (Rev. 0) to calculate Cumulative Usage Factors adjusted for Environmental Fatigue (CUF_{en}) for various components, without accounting for the effects of neutron embrittlement or other important degradation mechanisms and without conducting an error analysis on the CUF_{en} values. Finally, the release of the SSER2 revealed that NRC would not require Entergy to complete its CUF_{en} analysis of IP3 components until it crosses into the period of extended operation or develop inspection acceptance criteria for important components at IP2 and IP3, such as baffle former bolts, before NRC's decision on the license renewal application. The SSER2 signaled that NRC Staff would not require additional detail or different aging management methods than Entergy had proposed. In short, the information upon which the additional bases rely was not previously available, and is materially different from previously available information.

IV. THE NEW BASES MEET THE RELEVANT REQUIREMENTS OF 10 C.F.R. § 2.309(f)(1)³

1. The Bases Are Within the Scope of License Renewal – 10 C.F.R. § 2.309(f)(1)(iii)

Joint Contention NYS-38/RK-TC-5 relates to whether Entergy's application to renew the operating licenses for the Indian Point reactors and its proposed approach to various aging degradation forces comply with the regulations and statutes that apply to a license renewal application. That Contention and its bases have already been admitted by the Board. *Entergy Nuclear Operations, Inc.* (Indian Point Nuclear Generating Units 2 and 3), Memorandum and

³ As the State noted when it moved for leave to file additional bases for Contention NYS-25, it is not clear that the requirements of 10 C.F.R. § 2.309(f)(1) should apply to a request to add additional bases to a previously admitted contention, and some of the requirements do not seem to be relevant to such a request. *See* Motion for Leave to File Additional Bases for Previously-Admitted NYS-25 (Sept. 15, 2010), at 3 n.2. Nevertheless, this Motion addresses the requirements of subsection (f)(1) that would arguably apply to new bases.

Order (Nov. 10, 2011). In light of Entergy's substantial 2012-2014 amendments and modifications to its AMP for RVIs, which NRC Staff approved in the SSER2, the State of New York and Riverkeeper are supplementing the original bases for the joint contention to address specific shortcomings and ongoing omissions in the current version of Entergy's Amended and Revised RVI Plan. The RVI components at issue here include, without limitation, the core baffle, intermediate shells, former plates and bolts including baffle-to-baffle bolt locations, core barrel-to-former bolt locations, and baffle-to-former bolt locations, core barrel (and its welds), lower core plate and support structures, clevis bolts, fuel alignment pints, thermal shield, the lower support column and mixer, and the control rods and their associated guide tubes, plates and welds. Such RVI components are the subject of the revised AMP and are plainly within the scope of Part 54. *See* 10 C.F.R. §§ 54.4, 54.21(a)(1)(i). As was the case with the original Contention NYS-38/RK-TC-5, in the accompanying supplemental pleading intervenors challenge Entergy's proposed commitments and proffered information as well as the adequacy of the basis underlying the SSER2. As the Board noted when it admitted the original joint contention, "[t]he new commitments made by Entergy and evaluated by the NRC Staff in the SSER relate to Entergy's ability to manage the effects of aging during the period of extended operation, which is within the scope of this license renewal proceeding. These challenges satisfy 10 C.F.R. § 2.309(f)(1)(iii)." *Entergy Nuclear Operations, Inc.* (Indian Point Nuclear Generating Units 2 and 3), Memorandum and Order (Admitting New Contention NYS-38/RK-TC-5) at 11 (Nov. 10, 2011) (footnote omitted). Likewise, the additional bases, which concern omissions and inadequacies in Entergy's current proposal to manage aging effects for the RPV and internals, remain within the scope of this license renewal proceeding and Part 54 and thereby satisfy 10 C.F.R. § 2.309(f)(1) (iii).

2. The Issues Raised Are Material to the Findings that the NRC Must Make to Grant Entergy's Request for a License Renewal – 10 C.F.R. § 2.309(f)(1)(iv)

The adequacy of Entergy's currently proposed AMP for the RVIs is an essential issue in this proceeding. Under 10 C.F.R. § 54.21(c)(1)(iii), Entergy is required to show that "[t]he effects of aging on the intended function(s)" of the RVIs "will be adequately managed for the period of extended operation." The additional bases proposed by the State and Riverkeeper, supported by declarations from Dr. Richard Lahey and Dr. Joram Hopenfeld, would further support the existing contention that Entergy's AMP is lacking in important details, and also fails to adequately address important aging effects. If the State and Riverkeeper are correct in their assertions, then the NRC cannot grant Entergy's license renewal application as it currently stands. *See* 10 C.F.R. § 54.29(a). These questions are material to NRC's decision whether to grant the application to renew the operating licenses, and thus satisfy 10 C.F.R. § 2.309(f)(1)(iv).

3. Adequate Bases Have Been Provided for the Contention – 10 C.F.R. § 2.309(f)(1)(ii)

The State and Riverkeeper are seeking leave to submit additional bases in support of previously-admitted Joint Contention NYS-38/RK-TC-5. The existing bases for NYS-38/RK-TC-5 remain valid, and the new bases provide additional examples and specificity in further support of the overall contention that Entergy has failed to submit a legally sufficient AMP for the RVIs. The additional bases described in more detail than the "brief explanation" required by 10 C.F.R. § 2.309(f)(1)(ii), and are supported by specific supporting evidence as well as two expert declarations.

4. Concise Statement of Facts and Expert Opinion Supporting the Contention – 10 C.F.R. § 2.309(f)(1)(v)

The proposed additional bases are supported by declarations submitted by Dr. Richard Lahey and Dr. Joram Hopenfeld, both of whom describe a variety of ways in which the

Amended and Revised RVI Plan fails to comply with the applicable statutes and regulations, contrary to the conclusions of the NRC Staff in the SSER2. Dr. Lahey has noted that the Revised Plan does not account for synergistic aging effects on internals and does not consider the possible effect of shock loads on highly-embrittled and fatigued components. Dr. Lahey also opines that Entergy's reliance on inspection alone is not an adequate method to manage aging, as it does not account for the possibility that a shock load will cause one or more components to fail prior to the detection of cracks or other visual signs of wear. Dr. Lahey and Dr. Hopenfeld also note that Entergy has not yet developed inspection acceptance criteria for baffle former bolts, and may not develop acceptance criteria until 2019 for IP2 and 2021 for IP3. Dr. Hopenfeld describes some of the inadequacies in the CUF_{en} analysis that Entergy relies on, including its failure to account for the effects of neutron irradiation. Dr. Hopenfeld also notes that Entergy has not yet completed its CUF_{en} analysis for IP3, and may not complete it prior to the renewal of the IP3 license. The opinions of Dr. Lahey and Dr. Hopenfeld are based on their review of the SSER2, the underlying submissions from Entergy that the NRC Staff approved in the SSER2, various technical studies and reports, and their extensive professional experience. Specific references to the "sources and documents" that support the position of the State and Riverkeeper, as required by 10 C.F.R. § 2.309(f)(1)(v), may be found in the declarations of Dr. Lahey and Dr. Hopenfeld.

5. A Genuine Dispute Exists with the Applicant on Material Issues of Law or Fact – 10 C.F.R. § 2.309(f)(1)(vi)

The State of New York and Riverkeeper have provided sufficient information to establish a genuine dispute with Entergy on several material issues of fact relating to whether Entergy has submitted a plan for managing aging effects on the RVIs during the period of extended operation that meets the requirements of 10 C.F.R. § 54.21(c)(1)(iii). In particular, the State and

Riverkeeper have shown that a genuine dispute exists on whether the AMP is sufficient to the extent that it (1) merely commits to develop various details of the plan sometime after relicensing, (2) does not consider all aging-related degradation mechanisms, (3) is based on incomplete assumptions relating to the fatigue life of RVI components, and (4) relies on the inspection of fatigued components and does not consider the possibility that degraded components will fail prior to the appearance of detectable cracks or other wear. Entergy believes such a plan fulfills its legal obligations under 10 C.F.R. Part 54 and, in the SSER2, NRC Staff agreed. The State and Riverkeeper believe that more is required under the applicable statute and regulations.

V. CONCLUSION

For the reasons described above, the State of New York and Riverkeeper respectfully request that the Atomic Safety and Licensing Board grant leave to file the accompanying additional bases in support of already-admitted Joint Contention NYS-38/RK-TC-5.

Respectfully submitted,

Signed (electronically) by

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February 13, 2015

10 C.F.R. § 2.323 Certification

Statement of Movant Attorney:

Pursuant to 10 C.F.R. § 2.323(b) and the Board's July 1, 2010 Scheduling Order (at 8-9), I certify that I have made a sincere effort to contact counsel for NRC Staff and Entergy in this proceeding, to explain to them the factual and legal issues raised in this motion, and to resolve those issues, and I certify that my efforts have been unsuccessful.

Entergy and NRC Staff have advised that they do not oppose the State's motion and reserve their rights to respond on the merits. Clearwater does not oppose the motion.

Signed (electronically) by



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Assistant Attorney General
State of New York

Dated: February 12, 2015