

CONTENTION NYS-25

MARCH 17, 2015 NYS REPLY

PUBLIC & REDACTED VERSION

**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. March 17, 2015
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**STATE OF NEW YORK
REPLY IN SUPPORT OF ADMISSION OF
THE FEBRUARY 2015 SUPPLEMENT TO
PREVIOUSLY-ADMITTED CONTENTION NYS-25**

Public & Redacted Version

Office of the Attorney General
for the State of New York
The Capitol
State Street
Albany, New York 12224

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INTRODUCTION

Pursuant to 10 C.F.R. § 2.309(i)(2) and the Scheduling Order of the Atomic Safety and Licensing Board (the Board) dated July 1, 2010, intervenor State of New York (the State) submits this reply to the NRC Staff's answer to the State motion to supplement Contention NYS-25 (NRC Staff Answer) and Entergy's answer opposing the State's motion to amend Contention NYS-25 (Entergy Answer).¹ Both answers were filed on March 10, 2015. NRC Staff does not oppose the State's motion to supplement Contention NYS-25, except in two specific instances. Entergy opposes the State's motion in its entirety.

NRC Staff and Entergy's objections lack merit, and the State's Motion to Supplement Contention NYS-25 should be granted in its entirety. Notably, neither NRC Staff nor Entergy have submitted evidentiary materials or expert opinion to support their objections, or to contradict the detailed expert declaration offered by Dr. Richard T. Lahey in support of the motion to supplement. Instead, they raise a variety of narrow arguments that are inapt at the contention admissibility stage and attempt to distract from the fundamental and continued shortcomings in Entergy's License Renewal Application (LRA) alleged by the State.

PROCEDURAL HISTORY

The State seeks to supplement the bases for previously admitted Contention NYS-25, not to introduce a wholly new contention or radically amend an existing contention. Contention

¹ The Staff and Entergy answers are contained in responsive documents that address both the State's motion to supplement NYS-25 and the State and Riverkeeper's motion to supplement NYS-38/RK-TC-5. See "NRC Staff's Answer to (1) State of New York's Motion to Supplement Contention NYS-25, and (2) State of New York and Riverkeeper Inc.'s Joint Motion to Supplement Contention NYS-38/RK-TC-5" (NRC Staff Answer) and "Entergy's Consolidated Answer Opposing Intervenors' Motions to Amend Contentions NYS-25 and NYS-38/RK-TC-5 (Entergy Answer). Because Riverkeeper is a party to Joint Contention NYS-38/RK-TC-5, but not Contention NYS-25, the State is submitting separate replies in further support of the motions to supplement each contention. In addition, the intervenors' February 2015 motions contained certain common material (e.g., the declaration of Dr. Richard T. Lahey), the two contentions have different procedural histories and are not identical. NRC Staff and Entergy submitted consolidated answers to those motions, and therefore portions of today's two replies contain common arguments. The significant distinct issues for each contention have been briefed in Point I.

NYS-25, the operative text of which has not been amended, alleges that “Entergy’s License Renewal Application Does Not Include an Adequate Plan to Monitor and Manage the Effects of Aging Due to Embrittlement of the Reactor Pressure Vessels (“RPVs”) and the Associated Internals.” When the State first submitted this contention and the initial declaration of Dr. Richard Lahey, Entergy had not proposed an aging management plan for RVI components. Nonetheless, Entergy attempted to prevent the State from raising this contention. The Board, in admitting contention NYS-25, rejected Entergy’s arguments that the contention should not be admitted because (1) “the LRA already adequately deals with embrittlement of RPVs and the associated internals;” (2) “NYS fails to address or refer to the areas of the LRA that deal with these issues;” (3) “the expert support relied on by NYS makes bare assertions about what should be considered in the LRA without providing adequate support to justify admission of the contention;” and (4) “it is in compliance with 10 C.F.R. § 50.61, thus any challenge to its control of embrittlement is unsupported[.]” *Entergy Nuclear Operations, Inc.*, (Indian Point Units 2 and 3), 68 N.R.C. 43, 129-130, LBP-08-13 (July 31, 2008).

In July 2010, Entergy submitted an amendment to its LRA, referred to as LRA Amendment 9, that purported to establish a program to address embrittlement of RVI components. Believing that LRA Amendment 9 suffered from significant shortcomings, the State submitted additional bases for Contention NYS-25, supported by another expert declaration of Dr. Lahey. Again, Entergy objected to the admission of the new bases. The Board rebuffed Entergy’s claims that (1) “there is neither a sufficiently enumerated technical or factual basis nor a specific legal or factual challenge to Entergy’s reactor vessel internal program, in New York’s pleading and New York’s expert declaration;” and (2) the State “neither provides a factual basis nor raises a genuine dispute with respect to Entergy’s LRA because LRA Amendment 9 adheres

to the guidance provided by the Electric Power Research Institute (EPRI) Materials Reliability Program 227[.]” *Entergy Nuclear Operations, Inc.*, (Indian Point Units 2 and 3), Memorandum and Order (Ruling on Pending Motions for Leave to File New and Amended Contentions) (July 6, 2011) at 21-24 (unpublished).

In February 2012, Entergy yet again modified its approach for RVI components, which was subsequently changed through frequent communications with Staff and finally approved in the November 2014 SSER2 (collectively, Entergy’s Amended and Revised RVI Plan).

Notwithstanding its multi-year development, the Amended and Revised RVI Plan as approved by NRC Staff failed to address the longstanding concerns of the State regarding, among other things, synergistic aging mechanisms and the possible impact of shock loads on highly fatigued and embrittled components. The additional bases now being offered by the State, and supported by the 25-page declaration of eminently qualified expert witness Dr. Richard Lahey, allege that Entergy’s Amended and Revised RVI Plan, as approved by NRC Staff in the SSER2, is still inadequate to address the concerns raised in Contention NYS-25. Once again, Entergy has objected to the new bases, raising many of the same stale arguments previously rejected by the Board, apparently in an attempt to prevent the State from bringing its legitimate safety-related concerns to a hearing.

As noted, NRC Staff does not object to the admission of the supplement to Contention NYS-25 – with two exceptions concerning supporting evidence. This reply first addresses NRC’s Answer and then discusses Entergy’s Answer.

ARGUMENT

I. The State Should be Able to Refer to and Develop Supporting Evidence Concerning Potential Non-Conservatisms in NRC Branch Technical Position 5-3 and Federal Funding of Materials Degradation Research Because They Are Relevant to Contention NYS-25

NRC Staff does not oppose the State's proposed additional bases for NYS-25 nor does it oppose most of the supporting evidence identified by the State. Staff Answer at 1, 6. Its objection is limited to two aspects of supporting evidence; specifically, Staff objects to proposed paragraphs 7.15 and 7.16, which discuss (1) the importance of safety margins and a recently identified concern about non-conservatism in baseline material calculations, and (2) on-going federal research and expenditure of federal monies in the area of materials science and aging degradation mechanisms. According to Staff, these issues are irrelevant to Entergy's proposed RVI AMP or the Staff's review of that AMP as set forth in the SSER2. However, as explained below, Staff's position is unfounded.

BTP 5-3. Among other things, the State noted the importance of maintaining safety margins during the period of extended operation. NYS-25, Supplement ¶ 7.15; *see also* Lahey Decl. at ¶ 23. As part of its motion, the State also submitted documents discussing a recent discovery of a non-conservatism in a calculational model, known as NRC Branch Technical Position (BTP) 5-3, used for older pressurized water reactors. *See* Kwong Decl., Attachments 1, 2, 3. NRC Staff's objection to paragraph 7.15 appears to stem from its concern over the State's reference to BTP 5-3 as an example of the type of unanticipated calculational or modeling error that can occur and which an adequate safety margin is intended to protect against. More specifically, NRC Staff asserts that the State "fails to point to any reason to believe that the alleged non-conservatism in BTP 5-3 affects the adequacy of Entergy's AMP for RVIs, or that the Staff relied upon BTP 5-3 in approving Entergy's revised RVI AMP." NRC Staff Answer at

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

The potential non-conservatism of BTP 5-3 and the importance of preserving safety margins are critically important issues as reactor vessels – and their internal components – enter periods of extended operation. Given that Entergy disclosed documents concerning this issue in connection with NYS-25 and that NRC recently convened a discussion of this issue at a RVI meeting, the State submits that it should be permitted to refer to and develop this issue in the context of NYS-25.

Federal Research Efforts on Reactor Materials Degradation. Dr. Lahey referenced ongoing federal research concerning materials degradation. *See, e.g.*, February 2015 Lahey Decl. ¶¶11-12, 17. Staff claims that the NRC and the DOE’s ongoing research related to light water reactor sustainability and materials degradation research is also irrelevant to the State’s contention regarding the adequacy of Entergy’s Amended and Revised RVI Plan. To the contrary, the State’s reference to the federal government’s continued and considerable investment in this area of research serves to highlight the growing recognition of the need for better understanding of the complex and potentially synergistic degradation forces involved in operating reactors beyond their initial 40-year design life. This recognition and these expenditures provide evidence supporting the State’s claim that Entergy’s approach to aging

⁴ On February 19, 2015, after the State filed its supplement to NYS-25, NRC Staff and industry representatives held an all-day public meeting at NRC headquarters in Rockville, Maryland concerning reactor vessel internal issues that focused primarily on the non-conservatism of BTP 5-3.

reactor vessel internals at the Indian Point facilities must take into consideration synergistic effects of aging degradation mechanisms.

II. The State's February 2015 Supplement to Contention NYS-25 is Admissible

Entergy's objections to the Motion to Supplement Contention NYS-25 generally conflate the evidentiary requirements for contention admissibility with the level of evidence required to prove a contention after an evidentiary hearing. Under 10 C.F.R. § 2.309(f), contentions are admissible if they:

- (1) provide a specific statement of the legal or factual issue sought to be raised;
- (2) provide a brief explanation of the basis for the contention;
- (3) demonstrate that the issue raised is within the scope of the proceeding;
- (4) demonstrate that the issue raised is material to the findings the NRC must make to support the action that is involved in the proceeding;
- (5) provide a concise statement of the alleged facts or expert opinions, including reference to specific sources and documents, that support the petitioner's position and upon which the petitioner intends to rely at hearing; and
- (6) provide sufficient information to show that a genuine dispute exists with regard to a material issue of law or fact, including references to specific portions of the application that the petitioner disputes, or in the case when the application is alleged to be deficient, the identification of such deficiencies and supporting reasons for this belief.

Entergy Nuclear Operations, Inc., (Indian Point Units 2 and 3), Memorandum and Order (Ruling on Petitions to Intervene and Requests for Hearing), LBP 08-13, 68 N.R.C. 43, 60-61 (July 31, 2008). The NRC's "contention rules require reasonably specific factual and legal allegations at the outset to assure that matters admitted for hearing have at least some minimal foundation, are material to the proceeding, and provide notice to the opposing parties of the issues they will need to defend against." *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-10-11, 71 N.R.C. 287, 309 (March 26, 2010) (internal quotation marks and citations omitted). "Determining whether the contention is adequately

supported by a concise allegation of the facts or expert opinion is not a hearing on the merits.”

Entergy Nuclear Operations, Inc., (Indian Point Units 2 and 3), Memorandum and Order (Ruling on Petitions to Intervene and Requests for Hearing), LBP 08-13, 68 N.R.C. 43, 63 (July 31, 2008); *see Sierra Club v. USNRC*, 862 F.2d 222, 226 (9th Cir. 1988) (“In passing on the admissibility of a contention . . . it is not the function of a licensing board to reach the merits of [the] contention.” [internal quotations and citation omitted]).⁵ An intervenor is not required “to make its case at this stage of the proceeding, but rather to indicate what facts or expert opinions, be it one fact or opinion or many, of which it is aware at that point in time which provide the basis for its contention.” Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,170 (Aug. 11, 1989). The Board “do[es] not weigh the evidence” at this stage of the proceeding. *Entergy Nuclear Operations, Inc.*, (Indian Point Units 2 and 3), Memorandum and Order (Ruling on Pending Motions for Leave to File New and Amended Contentions) (July 6, 2011) at 28.

The Commissioners recently stated that a contention is properly admitted if the intervenor provides “application-specific support for the factual assertions in its contention,” even if the contention contradicts NRC Staff guidance. *Entergy Nuclear Operations, Inc.*, (Indian Point Units 2 and 3), Memorandum and Order, – N.R.C. –, CLI-15-6 (March 9, 2015) at 18-19. The

⁵ NRC precedent on this is clear and voluminous. *See, e.g., Louisiana Energy Services, L.P.*, CLI-04-35, 60 NRC 619, 623 (2004) (finding Intervenors are not asked to prove their case at the contention stage, but simply to provide sufficient alleged factual or legal bases to support the contention); *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), LBP-82-106, 16 NRC 1649, 1654 (1982) (finding that a licensing board should not address the merits of a contention when determining its admissibility); *USEC, Inc.* (American Centrifuge Plant), LBP-05-28, 62 NRC 585, 596-97 (2005) (finding that determining whether a contention is adequately supported by a concise allegation of the facts or expert opinion is not a hearing on the merits, and that a petitioner does not have to prove its contention at the admissibility stage); *Washington Public Power Supply System* (WPPSS Nuclear Project No. 2), ALAB-722, 17 NRC 546, 551 n.5 (1983) (All that is required for a contention to be acceptable for litigation is that it be specific and have a basis; whether or not the contention is true is left to litigation on the merits in the licensing proceeding).

NRC noted that whether or not the factual allegations set forth in the contention “adequately counter” the Staff’s guidance “is a merits determination.” *Id.* at 18.

Entergy states that a central issue here is whether or not it has demonstrated that the effects of aging will be adequately managed so that the intended functions of the components in question (vessel and internal components) will be maintained throughout the 20 year period of extended operation.⁶ When interpreting this standard as set forth in 10 C.F.R. § 54.21(c)(1)(iii), the Board has noted that “[t]he regulation does not specify exactly how this demonstration will be accomplished.” *Entergy Nuclear Operations, Inc.*, (Indian Point Units 2 and 3), Memorandum and Order (Ruling on Pending Motions for Leave to File New and Amended Contentions) (July 6, 2011) at 28.

Here, the State and its expert have identified genuine and material disputes with Entergy’s approach to reactor vessel internal components at Indian Point. The State has submitted a detailed affidavit alleging specific shortcomings in the most recent version of Entergy’s RVI AMP, as approved by the SSER2. Some of the concerns include:

- The Revised and Amended RVI Plan, which is based on MRP-227-A, relies on the inspection of RVI components to detect signs of wear. However, inspection of the entirety of all components is not possible, and inspection alone does not account for the possibility that heavily embrittled and fatigued components may not have visible signs of degradation, but could nonetheless fail as a result of an abnormal thermal or pressure shock load. *See* Lahey Declaration, ¶¶ 18-19, 22, 25.
- The Revised and Amended RVI Plan continues to consider both aging degradation mechanisms and RVI component functionality in “silos,” without addressing the synergistic, or combined, effects of multiple aging mechanisms or the possible loss of a coolable core geometry that could result from the failure and dislocation of RVI components. *See* Lahey Declaration, ¶¶ 24, 28-31.

⁶ Entergy’s Answer at 10 n 49. Entergy cites 10 C.F.R. § 54.21(a)(3). Intervenors have pointed to a nearly identical standard contained in 10 C.F.R. § 54.21(c)(1)(iii).

- The Revised and Amended RVI Plan does not acknowledge the significant uncertainties that exist regarding synergistic aging mechanisms that may impact RVI components during plant operation out to 60 years. *See* Lahey Declaration, ¶¶ 17, 29-31.

These expert opinions support the State's overarching contention that Entergy's Amended and Revised RVI Plan does not adequately manage the various aging effects on components inside the reactor vessel, as required by 10 C.F.R. § 54.21. In response, Entergy has not submitted any expert declaration or report contradicting the substance of the State's expert declaration. Instead, Entergy's attorneys have interposed a variety of procedural arguments, most of which amount to a dispute over issues of fact – questions that should be resolved at the evidentiary hearing. *See* Entergy's Answer at 18-27.

Entergy contends that intervenors failed to “accurately describe the RVI AMP” in stating that Entergy has “reaffirmed that it will not take preventative actions” to address the effects of aging on RVIs, *see* Entergy's Answer at 21-22, notwithstanding the fact that Entergy's own February 2012 submission, which intervenors quoted directly, states that “[t]he Reactor Vessel Internals Program is a condition monitoring program that *does not include preventative actions.*” Proposed Supplement to Contention NYS-25, ¶ 3.8, quoting Attachment 1 to NL-12-037 at 5 (emphasis added).⁷ To the extent that Entergy alleges that the RVI program is nonetheless sufficient to manage the effects of aging under 10 C.F.R. § 54.21, this argument goes to the merits of the supplemental bases, not their admissibility.

Entergy's specific objections to the supplemental contentions relating to baffle-former bolts, clevis insert bolts, and lower support column caps are even more transparent disputes over the merits of the new bases. *See* Entergy's Brief at 23-27. These are just three of the many RVI

⁷ Indeed, Entergy's Answer re-confirms this fact when it states “the RVI AMP is a condition monitoring program focused on inspections for the effects of aging.” Entergy Answer at p. 21:4-5.

components subject to Entergy's Revised and Amended RVI Plan, which intervenors used to highlight the Plan's shortcomings. Many other RVI components are also subject to the aging degradation mechanisms noted by intervenors, including the core baffle, intermediate shells, former plates and bolts (particularly the re-entrant corners, the baffle-to-baffle bolt locations, and the core barrel-to-former bolt locations), core barrel (and its welds), lower core plate and support structures, thermal shield, the lower support column and mixer, and the control rod guide tubes, plates, and welds. *See Additional Bases for Contention NYS-25 at ¶ 3.7.*

In short, Dr. Lahey has laid out his concerns with the Amended and Revised RVI Plan in a detailed expert declaration that refers to specific portions of the application and supporting documents. The State and its expert have pointed to specific, concrete shortcomings in Entergy's most recent Amended and Revised RVI Plan, going well beyond the "concise statement" or "minimal foundation" that are required at this stage. 10 C.F.R. § 2.309(f)(1)(v); *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-10-11, 71 N.R.C. 287, 309 (March 26, 2010).

Entergy is also incorrect in claiming that intervenors seek to challenge NRC regulations by suggesting that component repair or replacement may be appropriate. Entergy's Answer at 27-30. As the Board here has said, Entergy's argument that intervenors cannot seek aging management actions that are not specifically set forth by regulation "misse[s] the point[.]" *Entergy Nuclear Operations, Inc.*, (Indian Point Units 2 and 3), Memorandum and Order (Ruling on Pending Motions for Leave to File New and Amended Contentions) (July 6, 2011) at 28. If part replacement or repair is required to adequately manage the effects of aging, then it is an appropriate aging management response under the regulation. Entergy's argument that part replacement is not contemplated by the regulation is tantamount to claiming that NRC Staff, the

Atomic Safety and Licensing Board, and the NRC Commissioners themselves lack the regulatory authority to require Entergy to replace fatigued parts, even if it is necessary to ensure the continued safe operation of the reactor. Indeed, Entergy, by submitting a formal commitment to replace the split pins in IP2 during the second refueling outage in its period of extended operation, concedes that component replacement may be an appropriate aging management action under 10 C.F.R. § 54.21(a)(3). *See* SSER2 at 3-36, A-15 (LRA Commitment No. 50). Entergy's Fatigue Monitoring Program also contemplates that repair or replacement may be an appropriate corrective action for components that have a CUF_{en} value approaching unity. *See* LRA, Commitment 49 (referenced in SSER2 at A-15).

Entergy also suggests that intervenors should have attached the various technical reports relied upon by their experts. *See* Entergy's Answer at 19 n 102, 27, 32. While the Board's Scheduling Order states that "[i]f written testimony, an affidavit, or a motion or pleading of any kind seeks to have the Board rely on the contents of a report, website, NUREG, guidance document, or other document of any kind . . . then a copy of that document, or the relevant portion thereof, shall be submitted with and attached to the pleading," Scheduling Order at 17, this provision does not require intervenors to attach reference documents and prove their merits case now at the contention admissibility juncture. Rather, as previously briefed, at the contention admissibility phase the intervenors' burden is merely to identify the existence of a genuine dispute of material fact based on facts or expert opinion, including "*references* to the specific sources and documents on which the [intervenor] intends to rely" – the reports or documents relied upon by the experts are not required for a contention to be admitted. *See* 10 C.F.R. § 2.309(f)(1)(v).

III. MRP 227-A Is Not a Regulation and Does Not Preclude the Supplemental Bases

Entergy argues that the State's motion is inadequate because the Revised AMP Plan complies with MRP-227-A, and the proposed new bases do not challenge the technical bases of MRP-227-A. *See* Entergy Answer at 18-19. As an initial matter, MRP-227-A is not a legally binding regulation. *See Perez v. Mortgage Bankers Assn.*, – U.S. –, Slip Op. at 2. (March 9, 2015) (noting that only rules promulgated according to the notice-and-comment provisions of the Administrative Procedures Act have “the force and effect of law”). Rather, MRP-227-A is a guidance document prepared by representatives from the regulated industry and approved by NRC Staff. Moreover, as both the NRC and this Board have recognized in this proceeding, the alleged compliance of Entergy's LRA with guidance issued by NRC Staff is not a basis for refusing to admit a contention alleging that the LRA's fails to comply with the applicable regulations. *See Entergy Nuclear Operations, Inc.*, (Indian Point Units 2 and 3) Memorandum and Order, CLI-15-6 (March 9, 2015) at 18-19; *Entergy Nuclear Operations, Inc.*, (Indian Point Units 2 and 3), Memorandum and Order (Ruling on Pending Motions for Leave to File New and Amended Contentions) (July 6, 2011) at 27-28.

Furthermore, Entergy criticizes the State for not accepting MRP-227-A, a document that it states took industry 10 years to develop. *See* Entergy Brief at 5. Rather than undermine the State's concern, the long development confirms the significance of the issue, and industry's difficulty in developing an approach to it. Also, the lengthy development phase of MPR-227-A – followed by the 30 month review in this proceeding – does not mean that the guidance report addressed all aging management degradation mechanisms. Moreover, the State, supported by its knowledgeable expert, is entitled to contest the adequacy of the Entergy's proposed Amended and Revised RVI Plan and its reference to the MRP-227-A report.

In short, guidance documents or reports prepared by Staff and industry are not the equivalent of generally applicable regulations adopted through the rulemaking process prescribed by the Administrative Procedure Act. States and their experts are entitled to challenge the application of a guidance document to a facility that could affect the State, its citizens, and environment. MRP-227-A does not automatically entitle Entergy to a 20-year operating license.

IV. The State’s Supplemental Bases and Evidence Related to CUF_{en} Evaluations Are Within the Scope of Entergy’s Amended and Revised RVI Plan and the SSER2, and Are Therefore Timely

Entergy incorrectly argues that the supplemental bases referencing non-RVI CUF_{en} evaluations are outside the scope of the SSER2 and therefore untimely. *See* Entergy’s Answer at 16-17. A quick overview of the history of Staff and Entergy’s communications about CUF_{en} evaluations for RVI components belies Entergy’s apparently general claim that SSER2 “does not evaluate or approve any CUF_{en} calculations[.]” Entergy Answer at 17.

In October 2012, Entergy advised Staff that it intended to use the RVI Program to manage the cumulative fatigue damage aging effect for RVI components that have a time limited aging analysis that determined a CUF. Entergy letter NL-12-140, Attachment 1 (discussed in SSER2 at 3-52). Entergy subsequently changed its position and on May 7, 2013 advised Staff that it would rely instead on its Fatigue Monitoring Program to manage the effects of fatigue on RVIs during the period of extended operation. Entergy Letter NL-13-052, Attachment 1 at 8-9. As part of this revision, Entergy also proposed new Commitment 49, under which the company proposed to perform environmentally assisted fatigue analyses for RVI by recalculating CUF values to include effects of the reactor coolant environment (CUF_{en}). *Id.* Attachment 1 at 9 and Attachment 2 at 20 (proposed LRA Commitment 49). Entergy further indicated that it would undertake corrective action, including further CUF_{en} reanalysis, and/or repair or replacement of

the affected component before CUF_{en} reached 1.0. *Id.* Stated differently, Entergy proposed to take the CUF_{en} analysis used for other locations in the reactor coolant pressure boundary and apply or “import” that type of analysis into the category of reactor vessel internal components. In the November 2014 SSER2, NRC Staff acknowledged and found acceptable Entergy’s proposal including Entergy’s commitment to recalculate CUF_{en} values for RVI components pursuant to proposed Commitment 49. SSER2 at 3-53. As such, Commitment 49 and its agreement to use CUF_{en} measurements for reactor vessel components is firmly within the scope of the SSER2, Entergy’s Amended and Revised RVI Plan, and Contention NYS-25.

It appears that, in lieu of developing a comprehensive program to manage the full range of RVI aging mechanisms, including irradiation induced embrittlement, NRC Staff and Entergy have agreed to merely extend Entergy’s program for metal fatigue analyses to include CUF_{en} analyses of RVIs. However, the State and its expert contend that CUF_{en} analyses, even if coupled with fatigue monitoring, are not an adequate substitute for a detailed program designed to identify and manage aging components that may be highly embrittled and subject to sudden failure. Moreover, in order to properly monitor and track transient cycles and fatigue, New York contends that Entergy must have a reliable method for calculating CUF_{en} . In this proceeding, Dr. Lahey has previously voiced his concerns with the method used to calculate CUF_{en} values for non-internal components in connection with Consolidated Contention NYS-26B/RK-TC-1B.⁸ *See* Lahey Report in Support of Contention NYS-25 and Consolidated Contention NYS-26B and RK-TC-1B (December 20, 2011) ¶¶ 30-37 (referenced in February 2015 Lahey Decl. at ¶24). Among other things, these concerns have included questions about the WESTEMS approach and

⁸ The State notes that Dr. Lahey has previously objected to the failure to treat control rods as reactor vessel internals. *See, e.g.*, Lahey Report in Support of Contention NYS-25 and Consolidated Contention NYS-26B/RK-TC-1B (December 20, 2011), ¶25& n5.

the lack of any error analysis in Entergy's approach to CUF_{en} to date. According to Dr. Lahey, these concerns raise serious questions about the reliability of the approach to CUF_{en} at Indian Point. These concerns apply with equal or more force to the use of the same CUF_{en} calculations for RVI components – some of which are comparatively fragile and subject to harsher conditions when compared to the externals.

Entergy notes that Dr. Lahey's discussion of certain CUF_{en} values and the lack of error analysis cited reports for non-internal components, *see* Entergy's Answer at 16-17 referencing Lahey Decl. at ¶¶ 21-22, but this does not detract from the admissibility of the proposed supplemental bases for Contention NYS-25. Rather, Dr. Lahey referred to those reports to illustrate his concern – in the context of RVI analyses and Commitment 49 – about the lack of error analysis and his concerns about WESTEMS.

Finally, the fact that Entergy is not proposing to repair or replace components with extremely high CUF_{en} values illustrates the degree to which Entergy appears willing to operate its Indian Point reactors with aging components under conditions that come extremely close to exceeding the component's fatigue design basis. Allowing a safety-related system, structure, or component to run-to-failure is not an acceptable aging management plan. Given Entergy's eight year iterative approach to aging management of RVI components, from its inception in the 2007 LRA as a mere commitment to evaluate a nascent industry concept to its current proposal that recently incorporated the CUF_{en} approach in an attempt to address age-related degradation in various components inside the reactor vessels, the State's reference to Entergy's fatigue analyses in its proposed amended contention is both timely and appropriate.

CONCLUSION

For the foregoing reasons, the State respectfully requests that the Board admit the State's proposed additional bases for previously-admitted Contention NYS-25.

Respectfully submitted,

Signed (electronically) by

Brian Lusignan
Lisa S. Kwong
John J. Sipos
Assistant Attorneys General
Office of the Attorney General
for the State of New York
The Capitol
Albany, New York 12224
(518) 776-2380
john.sipos@ag.ny.gov
lisa.kwong@ag.ny.gov
brian.lusignan@ag.ny.gov

March 17, 2015

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

ATOMIC SAFETY AND LICENSING BOARD

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

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

Entergy Nuclear Indian Point 2, LLC, DPR-26, DPR-64
Entergy Nuclear Indian Point 3, LLC, and
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CERTIFICATE OF SERVICE

I hereby certify that on March 17, 2015, copies of the State of New York’s Reply in Support of the State’s Motion for Leave to Supplement Previously-Admitted Contention NYS-25 (public and redacted version) were served upon the Electronic Information Exchange (the NRC’s E-Filing System), in the above captioned proceeding.

Signed (electronically) by

Brian Lusignan
Office of the Attorney General
for the State of New York
The Capitol
Albany, New York 12224-0341
(518) 776-2399
Brian.Lusignan@ag.ny.gov

Dated at Albany, New York
this 17th day of March 2015