

**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 5, 2016  
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**STATE OF NEW YORK  
MOTION FOR LEAVE  
TO FILE SIX DOCUMENTS  
AS ADDITIONAL EXHIBITS**

Office of the Attorney General  
for the State of New York  
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## **INTRODUCTION**

Pursuant to 10 C.F.R. § 2.323(a), the State of New York respectfully requests leave to file six documents as exhibits – four Westinghouse “WCAP” documents commissioned by Entergy to support the Indian Point application and disclosed in January 2016, one technical paper discovered only recently by the State, and one NRC Staff Inspection Report – in support of Contentions NYS-25, NYS-26B/RK-TC-1B, and NYS-38/RK-TC-5 in this proceeding. Additionally, the State respectfully requests that these documents, should they be received as exhibits, be included in the record and admitted as evidence, along with a revised exhibit list.

The State is cognizant of the unfortunate and unavoidable timing of its motion, after the close of the November 2015 hearing in this proceeding and weeks before the deadline for submissions of the parties’ proposed findings of fact and conclusions of law. For this reason, the State does not bring this motion lightly. The proposed exhibits, however, are material to the issues in this proceeding and contain information that is not available in other evidence. The documents call into question the adequacy of Entergy’s reactor vessel internals aging management program, and specifically, whether Entergy’s flaw acceptance criteria and inspection response plan (1) is based on appropriate crack growth rate data, and (2) provides reasonable assurance against unacceptable failure of baffle-former bolts and other components. Consequently, good cause exists for allowing the State to file these additional exhibits, which will support the establishment of a sound hearing record, will not cause any delay in the proceeding or prejudice to other parties, and is otherwise in the public interest.

Entergy and NRC Staff oppose the State’s submission of the six documents as new exhibits. Riverkeeper and Clearwater support the State’s motion.

## **FACTUAL BACKGROUND**

On the evening of January 13, 2016, almost two months after the close of the November

2015 evidentiary hearing before the Atomic Safety Licensing Board in this proceeding, Entergy disclosed 13 new documents to the parties through its proprietary disclosure, mandatory disclosure, and publicly available logs. Entergy's proprietary disclosure log included, among other documents, four Westinghouse "WCAP" reports, which contain information specific to Indian Point Units 2 and 3. Each of these four documents was either an original issue, *i.e.*, a revision "zero" document, or was the first revision to an original issue that had not been disclosed previously by Entergy. The documents are:

1. WCAP-17941-P, Rev. 1, "Indian Point Units 2 and 3 Inspection Response Plan for Aging Management of MRP-227-A Primary and Expansion Components" (IPECPROP00085900) (proposed NYS000583) ("WCAP-17941" or "Inspection Response Plan"), *see* Kwong Decl. at ¶ 14;
2. WCAP-17949-P, Rev. 0, "Background and Technical Basis Supporting Engineering Flaw Acceptance Criteria for Indian Point Unit 2 Reactor Vessel Internals MRP-227-A Primary and Expansion Components" (IPECPROP00085359) (proposed NYS000584) ("WCAP-17949" or "Flaw Acceptance Criteria for IP2"), *see* Kwong Decl. at ¶ 15;
3. WCAP-17951-P, Rev. 0, "Background and Technical Basis Supporting Engineering Flaw Acceptance Criteria for Indian Point Unit 3 Reactor Vessel Internals MRP-227-A Primary and Expansion Components" (IPECPROP000856629) (proposed NYS000585) ("WCAP-17951" or "Flaw Acceptance Criteria for IP3"), *see* Kwong Decl. at ¶ 16; and
4. WCAP-18048-P, Rev. 0, "Determination of Acceptable Baffle-Former Bolting for Indian Point Units 2 and 3" (IPECPROP00086434) (proposed NYS000586) ("WCAP-18048" or "Indian Point Baffle-Former Bolting Analysis"), *see* Kwong Decl. at ¶ 17.

The next day, January 14, the State transmitted its request for documents logged on Entergy's January 13 disclosure logs. One week later, on January 20, the State received copies of the documents logged on Entergy's proprietary disclosure log, including the four WCAP reports listed above. That same day, January 20, the State advised counsel for Entergy and NRC that it was contemplating a motion to the Board seeking permission to submit as additional hearing exhibits certain documents disclosed by Entergy on January 13, 2015 and/or recently posted on ADAMS. The email identified nine documents and indicated that the list of documents could be revised or supplemented pending the State's review of the proprietary documents received from

Entergy earlier that day. After review of these documents, on January 27, the State engaged the parties to seek permission to submit the four Westinghouse “WCAP” reports as exhibits.

Based on its review and analysis of Entergy’s January 13 disclosures, the State ultimately identified a technical paper entitled “Disposition Curves for Irradiation-Assisted Stress Corrosion Cracking of Austenitic Stainless Steels in Light Water Reactor Environments,” authored by E.D. Eason and R. Pathania, and published in the Proceedings of the ASME 2015 Pressure Vessels and Piping Conference (proposed NYS000587) (“Eason paper”). The Eason paper had not been disclosed previously by any party, had not been cited in any document in the record, and was likely not available to the public until November 2015.<sup>1</sup> After prompt review of the Eason paper, consultation with the State’s expert, and a review of the record to confirm that the same or similar evidence was not already part of the record, the State informed the parties of its intention to file the Eason paper as an exhibit, as part of its January 27 consultation email.

Finally, the State moves to have admitted as an exhibit the License Renewal Inspection Report for Indian Point Unit 3 (ML15323A026) (proposed NYS000588) (“IP3 Inspection Report”). The document is a NRC Staff summary of its review of various commitments by Entergy as part of the Indian Point license renewal application. The document is dated November 19, 2015, and was posted to public ADAMS on November 30, 2015, after the completion of the November 2015 evidentiary hearing before the ASLB in this proceeding. The State disclosed the IP3 Inspection Report on December 31, and notified the parties of its interest in including the document as an exhibit on January 20, as part of its consultations on this issue.

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<sup>1</sup> Although the information in the document appears to have been presented at the ASME Pressure Vessels and Piping Conference in July 2015, it is the State’s understanding that ASME technical papers are not available for purchase until some months after such conferences. The State has attempted to contact the conference organizers to discern the exact date that the Eason paper was made available to the public, but has been unable to do so. *See* Kwong Decl. at ¶ 19.

Good cause exists for permitting the six documents being proffered by the State into evidence as exhibits. The four WCAP reports and the IP3 Inspection Report are each documents created specifically in connection with IP2 and IP3. These documents, including the Eason paper present new information that is not contained elsewhere in the record. Cumulatively, the six documents support the opinions and testimony presented by the State in this proceeding and were only recently identified or discovered by the State.<sup>2</sup> Moreover, the documents are self-authenticating, and the documents can be used by the parties without the need for any additional testimony from the witnesses.

## **ARGUMENT**

### **I. GOOD CAUSE EXISTS FOR ALLOWING THE STATE TO FILE THE SIX DOCUMENTS AS ADDITIONAL EXHIBITS**

#### **A. The Six Documents – Which Include Information Supporting the State’s Position on the Track 2 Contentions – Are Relevant**

The plain language and content of the six documents convey the clear relevance and materiality of the documents to this proceeding, and support the State’s position on the Track 2 contentions. Broadly, the documents suggest likely inadequacies in two central aspects of Entergy’s aging management plan for reactor vessel internals, *see* NYS000496, namely: (1) that the flaw acceptance criteria and associated 10-year inspection intervals for certain Primary and

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<sup>2</sup> During its consultations with the other parties on these issues, counsel for NRC Staff suggested that the standard to be applied to the State’s proposed motion was one for “motions to reopen” pursuant to § 10 C.F.R. 2.326. *See* Kwong Decl. at ¶ 8. The State disagrees. It is clear from the language of section 2.326 that a motion to reopen must demonstrate the likelihood of “a materially different *result*” had the proffered evidence been available. *See* 10 C.F.R. § 2.326(c) (emphasis added). No “result” has occurred; to date, the parties have yet to submit their proposed findings of fact and conclusions of law, and no final decision has yet been rendered on the State’s Track 2 Contentions. *See* 10 C.F.R. § 2.318. While the State would have preferred that the six documents that are the subject of this motion had been available to the parties and to the Board before the November 2015 hearing, that does not introduce any heightened standard for the State’s motion at this stage of the proceeding.



- [REDACTED]  
[REDACTED]  
[REDACTED];
- [REDACTED]  
[REDACTED]  
[REDACTED];
- [REDACTED]  
[REDACTED]  
[REDACTED]; and
- [REDACTED]  
[REDACTED]  
[REDACTED].

A recent paper by Eason and Pathania (proposed NYS000587), suggests that the crack growth rates used by Entergy for these Primary and Expansion components are inappropriate and non-conservative. The paper, which discusses data analyzed from over 800 IASCC crack growth rate data points, presents new PWR primary water disposition curves that are more appropriate to the operating conditions at IP2 and IP3 than the BWR disposition curves contained in MRP-227-A. Specifically, the proposed Eason exhibit presents a new PWR primary water disposition curve “which is about a factor of 5.6 higher than the [ ] MRP-227-A curve.” *See* Eason paper, at 4, Fig. 3. The Eason paper goes on to state that, at an operating temperature of 330°C and does of ~14 dpa or higher, “[t]he effect of the higher irradiated yield stress would be to shift the disposition curve upward on Fig. 3 by the factor  $(970/700)^{2.547} = 2.3$ .” *Id.* at 5.

To the State’s knowledge and based on its review of the record, these newly developed PWR primary water disposition curves are not cumulative or redundant of any other evidence in this proceeding. [REDACTED]

[REDACTED]

[REDACTED] Collectively, these documents are clearly relevant and contain information not otherwise available in the record, and good cause



into question whether Entergy's proposed inspection plan for baffle-former bolts can provide reasonable assurance of safe operations [REDACTED]

[REDACTED]. The baffle-former bolting analysis, WCAP-18048, along with the flaw acceptance criteria documents for IP2 and IP3 and the Entergy inspection response plan, are clearly relevant and good cause exists for their inclusion in the record as exhibits.

### 3. *IP3 Inspection Report*

The IP3 Inspection Report (proposed NYS000588) contains, among other things, a succinct summary of the preparation and review by Entergy and NRC Staff of fatigue issues at IP2 and IP3. *See* IP3 Inspection Report, at 5-7. The IP3 Inspection Report also provides an update regarding a reactor pressure vessel plate at IP3 that will reach the screening criteria for Pressurized Thermal Shock Temperature reference temperature in the midst of the proposed 20-year relicensing term. *Id.* at 4. Additionally, the inspection report for IP2 is already in evidence and the inclusion of this recently released NRC report is important for completeness of the record. The report was not available to the State until after evidentiary hearing concluded.

### **B. The State Has Presented this Motion in a Timely Fashion**

As stated above, the State acknowledges that this motion comes at a late stage in the proceeding – and after the close of the November 2015 evidentiary hearing on the State's Track Contentions. This, however, should not close off the State's opportunity to present recently received or newly identified information to the Board for inclusion in the record. The six proposed new exhibits were disclosed to or identified by the State after the hearing, and the four Westinghouse WCAP documents were not provided to the State until nearly two months after the close of the hearing. And while these documents are new, their existence is not unexpected. For example, WCAP-18048, the baffle-former bolting analysis for IP2 and IP3, is a plant-specific

version of a generic bolting analysis that is an exhibit in this proceeding, and which was discussed during the November hearing by witness for both Entergy and NRC Staff. *See* Hearing Tr. at 5235-5251. Moreover, at the hearing, witnesses for Entergy testified that the plant-specific analysis for IP2 and IP3 was under development and would be published in the first months of 2016 and before Spring inspections. *See* Hearing Tr. at 5237, 5239-5240, 5248. Additionally, the State's expert, Dr. Lahey, noted that the plant-specific bolting analysis for IP2 and IP3 was not yet available. *Id.* at 5343-5348. The parties understood the relevance of the document at the hearing and should have anticipated its upcoming availability.

In addition, it is Entergy – and not the State – who has driven the regrettable timing of this motion, only weeks before the deadline for proposed findings of fact and conclusions of law. The generic bolting analysis was published in 2001. *See* WCAP-15270 (ENT000654). The methodologies that support WCAP-18048, the plant-specific analysis for IP2 and IP3, were approved by NRC in 1999. *See* WCAP-15030-NP-A (ENT000655). The timing of the State's motion is driven by Entergy's decision not to publish its plant-specific bolting analysis earlier. In this respect, the State is in the unenviable position of responding to the disclosure of information by Entergy on a timetable not of its own choosing, and in the midst of its preparation of its proposed findings of fact and conclusions of law, due to the Board in only a few weeks. Given the need to carefully review and evaluate documents made newly available to the State, and in the preparation of the State's proposed findings of fact and conclusions of law, as well as the time required to draft this motion and consult with other parties on this motion, the State's submission is timely and shows good faith on the part of the State.

For its part, the State has acted diligently and expeditiously on its motion, all while attempting to find common ground on these six documents with the other parties. With respect to the four WCAP documents disclosed by Entergy in mid-January, the State immediately

requested copies of the documents the day after their disclosure to the parties. *See* Kwong Decl. at ¶ 4. The State received copies of the four documents one week later, on January 20. *Id.* With the documents available, the State diligently undertook a close review of the documents to assess the relevance of the documents and to confirm that the information in the documents was not cumulative of or redundant to similar information already in the record. On January 27, the State commenced consultations to assess the positions of the parties with respect to the four WCAP documents. *Id.* at ¶¶ 7-11. On February 5, counsel for Entergy and NRC Staff each advised the State of their opposition to the State's proposed motion. *Id.* at ¶ 12. The State's motion with respect to the four Westinghouse WCAP documents is timely.

Regarding the Eason paper, the State discovered the document in the midst of its review of documents disclosed by Entergy on January 13. *Id.* at ¶ 19. Specifically, a slide presentation created by the Electric Power Research Institute and presented to NRC, included a single slide regarding new disposition curves for irradiation-assisted stress corrosion cracking. *Id.*, *citing* ML15230A163. The slide references an EPRI report, which has not been disclosed by any party in this proceeding, and which counsel for Entergy and NRC Staff have represented is not in the possession of their clients. *Id.* at ¶ 19. The slide also suggests that new disposition curves are available, and references a 2015 meeting of the ASME Reactor Vessels and Piping Conference. *Id.* Upon discovering this information, the State ordered and obtained a copy of the Eason paper, reviewed its contents, and consulted its expert to confirm its relevance to the proceedings. *Id.* The State is not aware of any other reference in the record to new disposition curves for PWR primary water conditions, and the EPRI slide presentation was the State's first and only indication that these new disposition curves were under development, much less that they existed at all. *Id.* The State's motion as to the Eason paper is timely.

Finally, with respect to the IP3 Inspection Report, dated November 19, 2015, and posted

to ADAMS on November 30, 2015 (ML15323A026), the document was disclosed by the State on December 31, 2015. *Id.* at ¶ 20. The State promptly notified the parties of its intention to seek permission to submit the IP3 Inspection Report as an exhibit on January 20. *Id.* at ¶ 5.

The State further notes that the Board did allow the parties to supplement the post-hearing record with additional exhibits during the Track 1 Contentions. *See, e.g.*, January 15, 2013 Order (Scheduling Post-Hearing Matters and Ruling on Motions to File Additional Exhibits) ML13015A280 (admitting 16 new exhibits, and revised pleadings and testimony); and May 15, 2013 Order (Granting New York’s Motion for Leave to File Additional Exhibits) ML13135A273 (granting New York’s Motion to file two new exhibits). The State respectfully suggests that these referenced filings provide a useful path to resolve this current motion.

**C. The Six Documents Are Necessary to Develop a Sound Hearing Record and to Assess the Adequacy of the Evidence Presented by Staff and Entergy**

The Board should also grant the State’s request for leave to file the exhibits to ensure that the ultimate decision on relicensing is based on a complete record. It is of the utmost importance that the Board has a full record of all material and relevant evidence when rendering its relicensing decision. *See Pacific Gas & Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 & 2), ALAB-580, 11 N.R.C. 227, 230 (Appeal Board 1980) (“No conceivable good is served by making empty findings in the absence of essential evidence.”). The four WCAP documents are part and parcel of Entergy’s AMP for RVIs, and present key parameters of Entergy’s flaw acceptance criteria for IP2 and IP3 Primary and Expansion components, including baffle-former bolts. The Eason paper presents essential evidence on PWR primary water disposition curves, [REDACTED], and which suggest that cracks may propagate and grow in critical RVI components more quickly than accounted for under Entergy’s AMP for RVIs. Additionally, with regard to the IP3 Inspection Report, the inspection report for

IP2 is already in evidence and the inclusion of this recently released NRC report is important for completeness of the record. Thus, the documents are highly relevant and rise well above any concern of presenting cumulative or redundant information already received into evidence in this proceeding. Good cause exists to allow their filing for the Board's consideration.

**D. Submission of the Six Documents Will Not Cause Prejudice or Delay the Proceeding**

Neither Entergy nor Staff can be prejudiced by the introduction of the six documents. During initial stages of the consultations, the State considered bringing this motion with respect to a far larger set of documents, but opted instead to target a discrete set of these documents – the six documents presented in this motion – in an effort to reach consensus with the parties.

Moreover, as described above, the State acted expeditiously with respect to these documents.

Four of the proposed new exhibits are Westinghouse documents, [REDACTED]

[REDACTED]. Entergy was well-aware of the documents and acquainted with their relevance to the proceedings in this matter. Moreover, the preparation time line and the release date of the WCAP documents was within Entergy's control. Finally, the Inspection Report for IP3 is an NRC document. NRC Staff cannot be prejudiced by the introduction of its own documents.

The State has expeditiously sought consent and permission to introduce the exhibits. The reports squarely address Staff and Entergy's position on central issues in Track 2, including Entergy's RVI inspection and evaluation criteria and the status of Entergy's commitments. These issues were already topics addressed at the hearing, and, thus, the introduction of the reports will not expand the scope of the proceeding, delay any final decision by the Board, or have any adverse effect on the proceeding. *Cf. Entergy Nuclear Vermont Yankee and Entergy Nuclear Operations, Inc.*, (Vermont Yankee Nuclear Power Station), Entergy's Answer in

Support of Staff's Motion for Leave to Introduce Two Additional Exhibits (Aug. 24, 2006) (ML062430029) at 2 (supporting Staff's August 23, 2006 motion<sup>3</sup> to introduce two 25-year-old documents it had recently located on ADAMS as additional exhibits at an ASLB hearing scheduled for September 13-15, 2006 because "[t]here would be no significant impacts on any party as a result of the admission of these clearly relevant documents[,] . . . they do not represent a change in position by the Staff, nor raise issues that have not been previously addressed[,] . . . [and] [t]heir admission would not delay or expand the hearing or require the Board to address matters that it would not have otherwise been considered.'). The State respectfully requests that the Board accept these additional exhibits. In sum, no prejudice or delay weighs against allowing the State to file the six documents as exhibits even at this juncture in the proceeding.

## **II. GOOD CAUSE EXISTS FOR ADMITTING THE SIX DOCUMENTS INTO EVIDENCE**

Each of the six documents bears the hallmarks of reliability and authenticity, and should be received into evidence in this proceeding. The information contained in these six documents is relevant, material, and reliable, and not unduly repetitious of other evidence in the record. *See* 10 C.F.R. § 2.337(a).

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<sup>3</sup> *Entergy Nuclear Vermont Yankee and Entergy Nuclear Operations, Inc.*, (Vermont Yankee Nuclear Power Station), NRC Staff's Motion for Leave to Introduce Two Additional Hearing Exhibits (Aug. 23, 2006) (ML062360102).

## CONCLUSION

For the above reasons, the State respectfully requests that the Board grant the State of New York leave to file proposed exhibits NYS000583, NYS000584, NYS000585, NYS000586, NYS000587, and NYS000588, respectively, into evidence, in addition to a proposed revised exhibit list, as NYS000589. The documents are relevant to the State's Track 2 contentions, will contribute to the development of a sound record, may assist the Board in reaching its decision on the merits, and will not cause prejudice to any party or delay the proceeding.

Respectfully submitted,

***Signed (electronically) by***

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Dated: February 5, 2016

**Certificate Pursuant to 10 C.F.R. § 2.323**

In accordance with the Board's Scheduling Order of July 1, 2010 (at 8-9) and 10 C.F.R. § 2.323(b), the undersigned counsel hereby certifies that counsel for the State of New York has made a sincere effort to contact other parties in the proceeding and resolve the issues raised in the motion. The State of New York's efforts to resolve the issues with NRC Staff and Entergy have been unsuccessful, and NRC Staff and Entergy oppose this motion. Riverkeeper and Clearwater support the motion.

***Signed (electronically) by*** \_\_\_\_\_

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February 5, 2016