

**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. November 13, 2015
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**STATE OF NEW YORK
MOTION FOR LEAVE
TO FILE FIVE HEARING EXHIBITS**

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

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PRELIMINARY STATEMENT

Pursuant to 10 C.F.R. § 2.323(a), the State of New York (“State”) respectfully requests leave to file five additional hearing exhibits in support of Contentions NYS-25, NYS-26B/RK-TC-1B, and NYS-38/RK-TC-5.¹ The new exhibits include three demonstrative documents that were developed by the State’s experts specifically for the purpose of this hearing to aid their testimony. The two other documents were only recently discovered by the State in the midst of its experts preparing for the upcoming hearing in this matter.

The five documents are:

1. NYS000577, R.T. Lahey, “Figure – Developing Length for a Thermal Boundary Layer” (Nov. 2015) (NYS ID No. 1932) (1 page);
2. NYS000578, R.T. Lahey, “Figure – The Effect of Nodalization on Convective Temperature Transients” (Nov. 2015) (NYS ID No. 1933) (1 page);
3. NYS000579, D. Duquette, “Steam Generator Materials of Construction and Chromium Content” (Nov. 2015) (NYS ID No. 1934) (marked as containing EPRI proprietary information) (2 pages);
4. NYS000580, P.L. Andresen, A. Ahluwalia, *et al.*, “PWSCC of Alloys 690, 52 and 152,” *13th International Conference on Environmental Degradation of Materials in Nuclear Power Systems*, Whistler, British Columbia (Aug. 2007) (NYS ID No. 1930) (29 pages); and
5. NYS000581, A. Ahluwalia, “Alloy 690/52/152 PWSCC Testing,” *EPRI Technical Exchange Meeting on Materials, NRC* (June 2014) (ML14163A537) (NYS ID No. 1931) (23 pages).

Pursuant to 10 C.F.R. § 2.323(b), the State consulted with counsel for Entergy Nuclear Operations, Inc. (“Entergy”), Staff for the Nuclear Regulatory Commission (“NRC Staff”) and Riverkeeper, Inc. (“Riverkeeper”). Entergy and NRC Staff oppose the State’s motion. Both Riverkeeper and Hudson River Sloop Clearwater support the State’s motion.

Good cause exists for the filing of these five exhibits because they are highly relevant to the State’s Track 2 contentions and are likely to be discussed in the course of the upcoming

¹ The State is also filing a revised tailored Track 2 exhibit list (NYSR26001) that includes the five exhibits that are the subject of the State’s current motion.

evidentiary hearing. The filing of the three demonstrative illustrations that were developed by the State's experts, NYS000577, NYS000578, and NYS000579, will aid the testimony of the State's witnesses and their ability to provide full and meaningful responses to the Board's questions, and may streamline the hearing. The Andresen paper, NYS000580, and the Ahluwalia EPRI slide presentation to NRC, NYS000581, provide material information concerning issues at play in Contention NYS-38/RL-TC-5. Taken together, the inclusion of these exhibits will ensure a more complete record for the hearing, and allow for a more streamlined, efficient hearing process. The exhibits do not introduce any changes to the opinions or testimony from the State's experts, will not prejudice other parties or cause undue delay in the proceeding, and is in the public interest. The Board should grant the State's motion and allow the filing of these five exhibits.

FACTUAL BACKGROUND

Over the past few weeks, the State's expert witnesses, Dr. Richard T. Lahey, and Dr. David J. Duquette, have engaged in substantive preparations for the upcoming hearing on the State's Track 2 contentions. Their preparation has among other things, involved an in-depth review of the testimony, pleadings, and exhibits of Entergy, NRC Staff, and Riverkeeper submitted this year and over several years in this proceeding, and documents that have been generated in connection with Entergy's license renewal application and the Indian Point nuclear facilities. This includes several thousands of documents disclosed by the parties in this proceeding, and more than 600 exhibits produced by the parties in the Track 2 contentions alone.

In connection with the pre-trial preparations for Contentions NYS-25 and NYS-26B/RK-TC-1B, Dr. Lahey developed two figures for the specific purpose of this relicensing proceeding, NYS000577 and NYS000578, based on the written testimony he has provided in this proceeding

and based on his considerable expertise in the area of thermal hydraulics and safety technology, *see* Revised Pre-Filed Written Testimony of Dr. Richard T. Lahey Regarding Contention NYS-25 (NYS000482), at 4. The figures developed by Dr. Lahey visually depict the sort of temperature transient across the surface of a metal structure or component that are relevant to the fatigue evaluations and degradation mechanisms for structures and components at the Indian Point nuclear facilities. Dr. Lahey has provided considerable testimony in this proceeding regarding his concern that the thermal-hydraulic models and nodal convergence studies for quantifying thermal transients in the fatigue analysis are inadequate. *See* Pre-Filed Supplemental Reply Written Testimony of Dr. Richard T. Lahey Regarding Contention NYS-25 (Sept. 2015) (NYS000567), at 10, 27, 30-31; and Pre-Filed Supplemental Reply Written Testimony of Dr. Richard T. Lahey Regarding Contention NYS-26B/RK-TC-1B (Sept. 2015) (NYS000569), at 12, 27, 30-31. Dr. Lahey conceived of the two figures during his review of the testimony of experts for Entergy and NRC, to help visually illustrate these points. Dr. Lahey has informed the State that, in his opinion, the two figures are relevant to the Track 2 contentions, supportive of his opinions and the State's case, and contrary to Entergy and NRC Staff's litigation position in this proceeding. The same day that Dr. Lahey completed the development of these figures, November 11, 2015, the State disclosed the figures and promptly consulted with the parties as to whether they would consent to a motion for leave to submit the two figures developed by Dr. Lahey.

In connection with Contention NYS-38/RK-TC-5, Dr. Duquette has developed a summary table, NYS000579, of data presented in a lengthy report published in late 2014 by EPRI, entitled, "Steam Generator Management Program: Investigation of Crack Initiation and Propagation in the Steam Generator Channel Head Assembly" (NYS000544A-D) ("EPRI

Report”).² Dr. Duquette’s table is a synthesis of information presented in the EPRI Report regarding the chromium content of steam generator channel head components and their weldments. It is intended as a concise presentation of relevant data to assist the Board in understanding testimony by Dr. Duquette regarding the conclusions of the EPRI Report that the Board has already received in this proceeding. *See* Pre-Filed Written Supplemental Testimony of Dr. David J. Duquette Regarding Contention NYS-38/RK-TC-5 (Sept. 2015), at 11-12. Dr. Duquette began developing NYS000579 on or about November 6, 2015, and finalized the document the following week, on November 13, after confirming the accuracy of the information presented in the table against the EPRI source document. That same day, November 13, the State disclosed the table to the parties.

In the course of his preparations, Dr. Duquette also identified NYS000580, an article by Peter L. Andresen as lead author. The Andresen paper presents the results of an investigation of primary water stress corrosion cracking (PWSCC) and crack growth rates of cold worked Alloy 690 and as-weld-deposited Alloys 152 and 52. The paper was cited in the EPRI Report. *See* EPRI Report at 3-25, Reference 3-23. EPRI has submitted the this EPRI Report to NRC for review, and Entergy has indicated that it is evaluating whether to rely on the EPRI Report to support closure or amendment of its Commitments 41 and 42 regarding divider plate and tube-to-tubesheet-weld inspections. Revised Testimony of Entergy Witnesses Regarding Contention NYS-38/RK-TC-5, at A190. The Andresen paper is directly relevant to Contention NYS-38/RK-TC-5.

During his recent preparations, Dr. Duquette also identified NYS000581, a slide presentation authored by Al Ahluwalia, Technical Executive for EPRI, which was presented at a

² EPRI designated the EPRI Report as containing proprietary information. Accordingly, New York labeled the Dr. Duquette’s chart as containing EPRI proprietary information.

technical exchange meeting between EPRI and NRC Staff. The Ahluwalia EPRI slide presentation discusses research to date, as well as on-going industry concerns regarding the state of knowledge about certain factors affecting PWSCC susceptibility, such as cold work and local stresses. These issues relate directly to Contention NYS-38/RK-TC-5, which addresses primary water stress corrosion cracking in Indian Point steam generator divider plate and tube-to-tubesheet welds. Although the document is relevant to the State's contention, it was not disclosed by either Entergy or NRC. The State identified the document only recently and promptly disclosed it.

Both the Andresen article, NYS000580, and the Ahluwalia EPRI slide presentation to NRC, NYS000581, were identified and determined to be relevant by Dr. Duquette on or about Friday, November 6, 2015, and disclosed to the parties the following Monday, on November 9. Dr. Duquette has informed the State that, in his opinion, the three exhibits, NYS000579, NYS000580, and NYS000581, are supportive of his opinions and the State's case, and contrary to Entergy and NRC Staff's litigation position in this proceeding.

ARGUMENT

I. GOOD CAUSE EXISTS TO ADMIT THE PROFFERED EXHIBITS

Good cause exists for allowing the State to file the five documents as additional exhibits. Each of the proffered exhibits is clearly relevant to the Track 2 contentions, will add to the development of a sound hearing record, and will not cause prejudice to the parties or unduly delay the proceeding. None of the exhibits being proffered represents any change in position by the State or its experts, raises any issue that has not already been addressed, or would expand the hearing or require the Board to address matters that it would not have otherwise considered. In particular, the submission of the three visual demonstrative exhibits, NYS000577, NYS000578,

and NYS000579, will benefit the hearing process by allowing for more substantive discussion and lessening the time needed by the experts to generate free hand drawings or to provide verbal presentations of the same information contained in these documents. The State expects that the visual demonstrative exhibits will serve as economic summaries of complex and technical concepts that the Board may have questions about and that the witnesses may discuss.

The Board has instructed that relevant documents identified while the hearing record is open may be proffered as new exhibits. *See* Tr. at 4484-85 (Dec. 13, 2012). Of course, should the Board grant the State's motion and permit the filing of these exhibits, the Board can evaluate the reliability of the evidence and assess the appropriate weight that each exhibit should receive.

A. The Additional Exhibits —Which Include Information Supporting the State's Position on the Track 2 Contentions—Are Relevant

As set forth above, each of the proffered hearing exhibits is highly relevant to the proceeding and support the State's position on the Track 2 contentions. The two figures developed by Dr. Lahey visually depict the sort of temperature transient across the surface of a metal structure or component and are relevant to the metal fatigue evaluations and results presented by Entergy for the Indian Point nuclear facilities. The other three documents relate to the corrosion issues and issues discussed in the EPRI Report about steam generators. Because the additional documents support the State's position, they are relevant and thus, good cause exists to allow the State to file them as exhibits.

B. The Proffered Exhibits Are Necessary to Develop a Sound Hearing Record and to Determine the Reliability 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 five documents meet all the criteria of admissibility under 10 C.F.R. § 2.337(a). Consequently, good cause exists to allow their filing for the Board’s consideration at the hearing.

C. Submission of the Additional Exhibits Will Not Cause Prejudice or Delay the Proceeding

Through the course of preparations for the upcoming hearing of the Track 2 contentions, the State’s experts identified that information contained in the proffered exhibits were highly relevant information to the proceeding. On more or less the same day that the documents were identified and made available, the State disclosed the documents and initiated consultations on the State’s motion for leave to file additional exhibits. Neither Entergy nor Staff can be prejudiced by the introduction of the documents. Each of the proffered exhibits relates directly to testimony that has already been submitted in this proceeding by either Dr. Lahey or Dr. Duquette. None of these documents represents any change in position by the State or its experts, raises any issue that has not already been addressed, or would expand the hearing or require the Board to address matters that it would not have otherwise considered. Neither Entergy nor NRC Staff will be surprised or prejudiced, because the proffered exhibits are merely providing further support for testimony and opinions that the State’s experts have already provided.

Additionally, the introduction of the documents as pre-filed exhibits will not delay the hearing, even at this stage of the proceeding. The State expeditiously sought consent and permission to introduce the exhibits as soon as they were identified and made available by the State’s experts. The documents relate to NRC Staff and Entergy’s position on central issues in Track 2, including the evaluation of metal fatigue in the Indian Point steam generators, reactor pressure vessels and internal structures and components. These issues were likely already

hearing topics, and, thus, the introduction of the reports will not expand the scope of the hearing, delay the hearing, 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 motion³ 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."'). To ensure these documents are available at the hearing and properly labeled, the State respectfully requests that the Board accept these additional exhibits. In sum, no prejudice or delay weighs against allowing the State to file these documents as exhibits at this juncture in the proceeding.

In this proceeding, the Board has signaled its willingness to allow parties to supplement or correct the record on numerous occasions. For example, the Board granted the State's motion of September 23, 2015, for leave to file two NRC documents as additional exhibits along with pre-filed supplemental testimony. The State further notes that Entergy and NRC Staff from time to time have updated or corrected its pre-filed submissions as well as requested permission from the Board to submit additional exhibits after the submission pre-filed exhibits. In fact, just two days ago, on November 11, Entergy filed motion for leave to file seven new exhibits (including an errata sheet to correct certain pre-filed testimony of its witnesses). *See Entergy's Unopposed*

³ *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).

Motion for Leave to File New and Revised Hearing Exhibits (Nov. 11, 2015). Though some of these exhibits are revisions of exhibits that Entergy has previously filed, they total more than 900 pages, and require consideration by the State and its expert, Dr. Lahey. Nevertheless, the State did not oppose Entergy's filing of its new and revised exhibits. There are several other instances in this proceeding in which Entergy or NRC Staff has submitted updated or corrected its pre-filed submissions. *See, e.g.*, May 9, 2012 Applicant's Notice of Correction (which submitted revised pre-filed testimony as well as additional exhibits ENT000402, ENT000403, ENTR00422 in connection with Contention NYS-5) ML12130A504; May 9, 2012 Entergy letter to ASLB (same) ML12130A518; October 2, 2012 Entergy Unopposed Motion for Leave to File Additional Exhibits (submitting fifteen exhibits, which it asserted were relevant and likely to be discussed at the October 2012 evidentiary hearing) ML12276A482.⁴ The State respectfully suggests that these referenced filings provide a useful path to resolve this current motion.

CONCLUSION

For the above reasons, the State respectfully requests that the Board grant the State of New York leave to file the presentation materials and documents listed above as exhibits NYS000577, NYS000578, NYS000579, NYS000580, and NYS000581.

⁴ As indicated, NRC Staff, Riverkeeper, and the State did not oppose this recent motion by Entergy.

Executed on November 13, 2015

Respectfully submitted,

Signed (electronically) by

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10 C.F.R. § 2.323 Certification

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 Hudson River Sloop Clearwater support the motion.

Executed on November 13, 2015

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