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March 29, 2012

Lawrence G. McDade, Chairman
Dr. Richard E. Wardwell
Dr. Kaye D. Lathrop
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

**Re: Entergy Nuclear Operations, Inc. (Indian Point Nuclear Generating
Units 2 and 3), Docket Nos. 50-247-LR and 50-286-LR**

Dear Administrative Judges:

Pursuant to 10 C.F.R. §§ 2.1204, 2.319, 2.323, 2.337, the Atomic Safety and Licensing Board's ("Board") Protective Order of September 4, 2009, Scheduling Order of July 1, 2010, and subsequent Order dated February 16, 2011, Entergy Nuclear Operations, Inc. ("Entergy") is filing the attached Testimony of Entergy Witnesses Nelson F. Azevedo, Alan B. Cox, Jack R. Strosnider, Robert E. Nickell, and Mark A. Gray Regarding Contention NYS-26-B/RK-TC-1B (Metal Fatigue) ("Testimony"), and its supporting exhibits.

In accordance with paragraphs A and K.2 of the Board's September 4, 2009, Protective Order, counsel for Entergy is notifying the Board that portions of the Testimony quote or reference exhibits that contain Entergy-Designated Proprietary Information Owned by Westinghouse. The exhibits that contain proprietary information are listed below, including the proprietary exhibits submitted by Entergy and those proprietary exhibits submitted by other parties that are referenced in Entergy's Testimony.

- **Exhibit ENT000183**, Testimony of Entergy Witnesses Nelson F. Azevedo, Alan B. Cox, Jack R. Strosnider, Robert E. Nickell, and Mark A. Gray (Mar. 29, 2012).

- **Exhibit ENT000196**, Westinghouse Level 2 Policy/Procedure NSNP 3.2.6, Design Analysis (Mar. 2011).
- **Exhibit ENT000199**, Westinghouse Calculation Note Number CN-PAFM-09-100, Rev. 0, “Indian Point Unit 2 Insurge/Outsurge and Environmental Fatigue Evaluations,” (June 10, 2010).
- **Exhibit ENT000200**, Westinghouse Calculation Note Number CN-PAFM-09-63, Rev 0. “Indian Point Unit 2 Pressurizer Insurge/Outsurge Transient Development” (June 18, 2010).
- **Exhibit ENT000201**, Westinghouse Calculation Note Number CN-PAFM-08-109, Rev. 0, “Indian Point Units 2 and 3: Transfer Function Database Development for Hot Leg Surge Nozzle” (June 18, 2010).
- **Exhibit ENT000202**, Westinghouse Calculation Note Number CN-PAFM-08-78, Rev. 0, “Indian Point Units 2 and 3: Transfer Function Database Development for Hot Leg Charging Nozzle” (June 18, 2010).
- **Exhibit ENT000203**, Westinghouse Calculation Note Number CN-PAFM-08-116, Rev. 0, “Indian Point Units 2 BIT Nozzle Transfer Function Database Development” (June 18, 2010).
- **Exhibit ENT000204**, Westinghouse, Calculation Note CN-PAFM-08-103, Rev. 0, “Indian Point Units 2 and 3: Transfer Function Database Development for Accumulator Nozzles” (June 17, 2010).
- **Exhibit ENT000205**, Westinghouse Calculation Note Number CN-PAFM-09-105, Rev. 0, “Indian Point Unit 3 Insurge/Outsurge and Environmental Fatigue Evaluations” (June 22, 2010).
- **Exhibit ENT000206**, Westinghouse Calculation Note Number CN-PAFM-09-74, Rev. 0, “Indian Point Unit 3 Boron Injection Tank Nozzle Environmental Fatigue Evaluations” (June 14, 2010).
- **Exhibit ENT000207**, Westinghouse Calculation Note Number CN-PAFM-09-13, Rev. 0, “Indian Point Unit 3: BITank Nozzle Transfer Function Database Development” (June 18, 2010).
- **Exhibit ENT000210**, Westinghouse, Systems Standard Design Criteria 1.3.F, Rev. 0, Reactor Coolant System Design Transients for Standard Plants with Model F Steam Generators (July 1978).
- **Exhibit ENT000211**, Westinghouse Memorandum LTR-SSO-03-43, Rev. 1, from NS Systems & Safety Analysis, “Design Transient Revisions for Indian Point 2 4.7% Uprate – Revised Figures” (Apr. 25, 2003).
- **Exhibit ENT000212**, Westinghouse Memorandum LTR-SCS-03-53, Rev. 0, from NS Systems & Safety Analysis, “Design Transient Revisions for Indian Point 3 Stretch Power Uprate Project – Revised Figures” (Aug. 21, 2003).
- **Exhibit ENT000213**, Westinghouse, Systems Standard Design Criteria 1.3.X, Rev. 0, Nuclear Steam Supply System Auxiliary Equipment Design Transients for All Standard Plants (Sept. 1978).

- **Exhibit ENT000217**, Westinghouse Owners Group, WCAP-9693, Investigation of Feedwater Line Cracking in Pressurized Water Reactor Plants (June 1980).
- **Exhibit ENT000218**, Westinghouse Owners Group, WCAP-12639, Pressurizer Surge Line Thermal Stratification Generic Detailed Analysis Program MUHP-1091 Summary Report (June 1990) (“WCAP-12639”).
- **Exhibit ENT000219**, Westinghouse, WCAP-12937, Structural Evaluation of Indian Point Units 2 and 3 Pressurizer Surge Lines, Considering the Effects of Thermal Stratification (May 1991).
- **Exhibit ENT000227**, Westinghouse, WCAP-13588, Operating Strategies for Mitigating Pressurizer Insurge and Outsurge Transients (Mar. 1993).
- **Exhibit ENT000228**, Calculation Note RCDA-03-75, Indian Point Unit 3 Stretch Power Uprate Reactor Vessel Structural Evaluation (May 2005).
- **Exhibit ENT000229**, Calculation Note RCDA-03-64, Indian Point Unit 2 Stretch Power Uprate Reactor Vessel Evaluation (Feb. 2005).
- **Exhibit RIV000034**, Pre-filed Written Testimony of Dr. Joram Hopenfeld Regarding NYS-26-B/RK-TC-1B – Metal Fatigue (Dec. 22, 2011).
- **Exhibit RIV000035**, Report of Dr. Joram Hopenfeld in Support of Contention NYS-26-B/RK-TC-1B – Metal Fatigue (Dec. 22, 2011).
- **Exhibit RIV000036**, Westinghouse, “EnvFat User's Manual Version 1” (May 2009).
- **Exhibit RIV000042**, Westinghouse, Calculation Note CN-PAFM-05-114, Rev. 0, “DC Cook Charging Nozzle License Renewal Environmental Fatigue Evaluations”
- **Exhibit RIV000043**, Diablo Canyon Unit 1 Insurge/Outsurge and Environmental Fatigue Evaluations, WCAP-170103-P, Rev. 0 (July 2009).
- **Exhibit RIV000050**, WCAP-14950, Westinghouse, Mitigation and Evaluation of Pressurizer Insurge/Outsurge Transients (Feb. 1998).
- **Exhibit RIV000055**, Westinghouse, Indian Point Unit 3 Pressurizer Insurge/Outsurge Transient Development, CN-PAFM-09-64 (June 2010).
- **Exhibit RIV000056**, System Standard Design Criteria, Nuclear Steam Supply System Design Transients (Jan. 11, 1971).
- **Exhibit NYS000341**, Westinghouse, WCAP-14577, Rev. 1-A, License Renewal Evaluation: Aging Management for Reactor Internals (Mar. 2001).
- **Exhibit NYS000342**, Westinghouse, Letter No. LTR-PAFM-03-42, “Procedures for Transfer Function Database Creation and Guidelines for the Associated Finite Element Analysis” (Mar. 2006).
- **Exhibit NYS00358A-B**, Westinghouse, WESTEMSTM User’s Manual, Ver. 4.5 (Mar. 2007).
- **Exhibit NYS000359**, Westinghouse, WCAP 14173, Rev. 2, Global to Local Transformations and Stress Transfer Functions for Pressurizer Surge Line, Pressurizer Lower Head and Pressurizer Spray Line (Aug. 1995).
- **Exhibit NYS000361**, Westinghouse, WCAP-17199-P, Rev. 0, Environmental Fatigue Evaluation for Indian Point 2 (June 2010).

- **Exhibit NYS000362**, Westinghouse, WCAP-17200-P, Rev. 0, “Environmental Fatigue Evaluation for Indian Point Unit 3 (June 2010).
- **Exhibit NYS000363**, Westinghouse, WCAP-17149-P, Rev. 1, Evaluation of Pressurizer Insurge/Outsurge Transients for Indian Point Unit 2 (July 2010); Westinghouse, WCAP-17162-P, Rev. 1, Evaluation of Pressurizer Insurge/Outsurge Transients for Indian Point Unit 3 (July 2010).
- **Exhibit NYS000364**, Westinghouse Calculation Note, CN-PAFM-09-21, “Indian Point Units 2 & 3 Charging Nozzles Environmental Fatigue Evaluation” (June 18, 2010).
- **Exhibit NYS000365**, Westinghouse Calculation Note, CN-PAFM-09-67, “Pressurizer Surge Nozzle and Lower Head Transfer Functions for Indian Point Units 2 and 3” (June 18, 2010).
- **Exhibit NYS000366**, Westinghouse Calculation Note CN-PAFM-09-77, “Indian Point Units 2 & 3 Accumulator Nozzle Environmental Fatigue Evaluation” (June 18, 2010).
- **Exhibit NYS000367**, Westinghouse Calculation Note, CN-PAFM-09-79, “Indian Point Unit 2 Boron Injection Tank Nozzle Environmental Fatigue Evaluations” (June 18, 2010).
- **Exhibit NYS000368**, Westinghouse Calculation Note, CN-PAFM-09-117, “Indian Point Units 2 and 3 Hot Leg Surge Nozzle Environmental Fatigue Evaluations” (June 18, 2010).
- **Exhibit NYS00369A-B**, Westinghouse, WCAP-12191, Rev. 3, Transient and Fatigue Cycle Monitoring Program Transient History Evaluation Report for Indian Point Unit 2 Addendum 1 (Sept. 2003).

In accordance with paragraphs A and K of the Protective Order, the Testimony and relevant exhibits have been appropriately marked as containing Entergy-designated proprietary information,¹ and is being served via the NRC’s Electronic Information Exchange upon the

¹ See Licensing Board Protective Order at 6 (Sept. 4, 2009) (unpublished) (stating that “all pleadings, issuances, testimony, exhibits and correspondence in this proceeding that contain proprietary information shall be treated as confidential, marked in accordance with paragraph A above”); *see also id.* at 2 (stating that a label identifying a document as containing proprietary information shall appear “on the first page and on *each other page of the document*”) (emphasis added).

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Board, its law clerks, the Office of the Secretary, and representatives of Hearing Participants that are authorized to receive such information pursuant to the Protective Order.

Respectfully submitted,

Executed in accord with 10 C.F.R. § 2.304(d)

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