

United States Nuclear Regulatory Commission Official Hearing Exhibit	
In the Matter of:	Entergy Nuclear Operations, Inc. (Indian Point Nuclear Generating Units 2 and 3)
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March 29, 2012

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
)
ENTERGY NUCLEAR OPERATIONS, INC.) Docket Nos. 50-247-LR/ 50-286-LR
)
(Indian Point Nuclear Generating)
Units 2 and 3)

NRC STAFF'S INITIAL STATEMENT OF POSITION ON
CONTENTION NYS-8 (TRANSFORMERS)

INTRODUCTION

Pursuant to 10 C.F.R. §§ 2.1207(a)(1) and 2.337(g)(2), Scheduling Order (July 1, 2010) (unpublished) at 14, Order (Clarifications of Procedures for Evidentiary Filings) (Oct. 18, 2011) (unpublished) at 2-3, and Order (Granting NRC Staff's Unopposed Time Extension Motion and Directing Filing of Status Updates) (February 16, 2012) (unpublished) at 1, the Staff of the U.S. Nuclear Regulatory Commission ("Staff" or "NRC Staff") submits its initial written statement of position and written testimony with supporting affidavits and exhibits on New York State's ("NYS") Contention 8 ("NYS-8") regarding the treatment of transformers in license renewal. Appended to this filing is the "NRC Staff Testimony of Roy Mathew and Sheila Ray Concerning Contention NYS-8 (Transformers)" and seven (7) Staff Exhibits. For the reasons set forth below and in the testimony filed herewith, the Staff submits that transformers are active components; transformer functionality is readily monitorable; and degradation in transformers is also readily monitorable; therefore, transformers are not subject to aging management review and do not require an aging management program. NYS-8, which asserts that transformers require both aging management review and an aging management program, is thus incorrect and unsustainable.

BACKGROUND

On July 31, 2008, the Board admitted Contention NYS-8, which alleges:

The LRA for IP2 and IP3 violates 10 C.F.R. §§ 54.21(a) and 54.29 because it fails to include an aging management plan for each electrical transformer whose proper function is important for plant safety.¹

In its Initial Statement of Position,² NYS accurately identifies the dates on which the various pleadings were filed and decisions issued by the Atomic Safety and Licensing Board ("Board") in this proceeding with respect to Contention NYS-8. While the Staff does not agree with NYS' characterizations of the substance of the pleadings or the Board's decisions, the Staff otherwise adopts the procedural history provided by NYS.

DISCUSSION

I. REGULATORY STANDARDS

The regulations which set forth the safety review standards for license renewal are in 10 C.F.R. Part 54. Underlying the renewal regulations is the principle that each nuclear power plant has a plant-specific current licensing basis ("CLB")³ that must be maintained during the renewal term in the same manner and to the same extent as during the original licensing term. *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power

¹ *Entergy Nuclear Operations, Inc.* (Indian Point Nuclear Generating Units 2 and 3), LBP-08-13, 68 NRC 43, 217 (2008).

² State of New York, Initial Statement of Position, Contention NYS-8, 4-6 (December 12, 2011) (NYS000002).

³ The CLB is "the set of NRC requirements (including regulations, orders, technical specifications, and license conditions) applicable to a specific plant, and includes the licensee's written, docketed commitments for ensuring compliance with applicable NRC requirements and the plant-specific design basis." *Pilgrim*, CLI-10-14, 71 NRC at 453-54 (*citing* 10 C.F.R. § 54.3). Both during the original license term and continuing through the renewal term, the NRC continually assesses the adequacy of the CLB, as well as the licensee's compliance with its CLB, through the NRC regulatory oversight process, generic and plant-specific reviews, plant inspections, and enforcement actions. *Id.*

Station), CLI-10-14, 71 NRC 449, 453 (*citing* Final Rule, Nuclear Power Plant License Renewal; Revisions, 60 Fed. Reg. 22,461, 22,464 (May 8, 1995) (License Renewal Rule) (NYS000016)).

Pursuant to 10 C.F.R. § 54.29, the Commission may issue a renewed license if the Commission finds that there is reasonable assurance that the activities will continue to be conducted so that the CLB will be maintained and the effects of aging will be managed.

10 C.F.R. § 54.29. *Pilgrim*, CLI-10-14, 71 NRC 449, 462 n.71, 465.

Contention NYS-8 challenges the License Renewal Application (“LRA”) filed by Entergy Nuclear Operations, Inc. (“Entergy”) for Indian Point Nuclear Generating Units 2 and 3 (“Indian Point”) and the Staff’s Safety Evaluation Report Related to the License Renewal of Indian Point Nuclear Generating Unit Nos. 2 and 3 (“SER”) because the LRA and the SER treat transformers as active components and do not subject them to an aging management review (“AMR”), and also do not provide an aging management program (“AMP”) for them. Accordingly, NYS argues, Entergy has not demonstrated that the effects of aging on transformers will be managed.

AMRs are addressed at 10 C.F.R. § 54.21. The regulation requires AMRs for components that are long-lived and perform an intended function without moving parts or without a change in property or configuration. 10 C.F.R. § 54.21(a). These components are commonly referred to as “passive”.⁴ The regulation provides that the license renewal applicant demonstrate that aging effects will be adequately managed so that the component will be able to perform its intended function consistent with the current licensing basis for the period of extended operation. 10 C.F.R. § 54.21(b). In order to demonstrate adequate

⁴ 60 Fed. Reg. at 22477.

management of aging effects, license renewal applicants can use AMPs consistent with Commission guidance in NUREG-1801, Rev. 2, *Generic Aging Lessons Learned (GALL) Report* (“GALL” or “GALL Report”) (December 2010) (NYS000146), *NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), CLI-12-05, 75 NRC __ (March 8, 2012) (slip op. at 18). Components that are not subject to AMR do not require an AMP.

II. STAFF WITNESSES

The Staff’s witnesses are Roy K. Mathew and Sheila Ray.

Mr. Mathew is a Team Leader in the Electrical Engineering Branch in the Division of Engineering in the Office of Nuclear Reactor Regulation. He served as the principal reviewer of the Staff’s treatment of electrical transformers in connection with the Indian Point license renewal and provided input regarding the Staff’s SER in the areas of scoping and screening and aging management of electrical and instrumentation and controls systems. He has provided inputs and participated in International Atomic Energy Agency technical meetings. He assisted in the preparation of Information Notice 2009-010, “Transformer Failures – Recent Operating Experience,” (NYS000019).

Ms. Ray is an Electrical Engineer in the Office of Nuclear Regulatory Research and the project manager for Confirmatory Research on Equipment Qualification. Before she moved to research, she was employed as an Electrical Engineer in the Division of Engineering in the Office of Nuclear Reactor Regulation (NRR). In NRR, she conducted reviews of license renewal applications, specifically focusing on aging management of electrical components, and provided input to scoping and screening portions of the Indian Point SER regarding electrical components. She has provided inputs and participated in International Atomic Energy Agency technical meetings.

III. PURPOSE OF STAFF WITNESS TESTIMONY

The purpose of Mr. Mathew and Ms. Ray's testimony ("Staff Transformer Testimony") is to explain why the Staff considers electrical transformers active components and thus why they are not subject to aging management review or require an aging management program.

IV. DIRECT TESTIMONY

Active components generally have moving parts or undergo a change in configuration, properties, or state in order to perform their intended functions. Age-related degradation of active components is usually readily monitorable and failure of active equipment is usually readily apparent. NRC Staff's Testimony of Roy Mathew and Sheila Ray Concerning Contention NYS-8 (Transformers) (NRC000031) ("Staff Transformer Testimony") at 8.

Passive components, on the other hand, generally perform their intended functions without moving parts or changes in state, configuration or properties. Age-related degradation in a passive component is not readily monitorable and failure of a passive component may not be readily apparent. *Id.*

Active components are adequately monitored and maintained against age-related degradation under existing programs, including the Maintenance Rule, 10 C.F.R. § 50.65. *Id.* at 15.

In contrast, age-related degradation in passive components requires additional management and, for this reason, the Commission requires that passive components be subject to aging management review. *Id.* at 8-10. That review identifies the means by which age-related degradation will be managed. *Id.* at 10-11. Licensees can use AMPs identified in GALL to demonstrate management of age-related degradation. *Id.* at 8-9.

A transformer changes state as it converts variations of current in a primary circuit to variations of voltage and current in a secondary circuit via induction. *Id.* at 6 and 11. It transforms electrical energy into magnetic energy, then back into electrical energy again. *Id.*

Because its operation depends on electromagnetic induction between two stationary coils and a magnetic flux of changing magnitude and polarity, a transformer is an active alternating current device. *Id.* Gross failure of a power transformer is typically monitored by various indications and alarms in the control room. *Id.* at 15. Thus, the functionality of transformers is readily monitorable. Transformers are also readily monitorable for age-related degradation through existing programs and there is no need for additional aging management review or aging management programs. *Id.* at 11-12 and 15-18.

Transformers are like the active components identified in 10 C.F.R. § 54.21(a)(1). They are like circuit breakers, relays and switches because all of them are monitored in a similar way. The results of monitoring can be analyzed and trended to provide an indication of age-related degradation in transformers, circuit breakers, relays, and switches. *Id.* at 12-13 and 15-16.

Transformers are also like switchgear, power supplies, battery chargers and power inverters, all of which are active components. Like these components, transformers perform their intended function through a change in state similar to the change in state that these components undergo. In addition, like these components, degradation in a transformer's ability to perform its intended function is readily monitorable. *Id.* at 14-15 and 17-18.

Transformers are also like batteries because both of these components operate without moving parts. They are not subject to periodic replacement based on a qualified life or specified time period. The ability of these components to perform their intended functions is readily monitorable. *Id.* at 20.

Transformers are like transistors because, again, they undergo a change in state to perform their intended functions, with no moving parts. They are both long-lived components and degradation in their ability to perform their intended function is readily detectable and, in many instances, will trigger plant alarms. *Id.* at 20-21.

Transformers are like battery chargers because they both operate without moving parts. They perform an electrical conversion that cannot be seen but can only be measured. Both components are long-lived and readily monitored. *Id.* at 21.

Transformers are different than cables and pipes because age-related degradation in cables and pipes is not readily monitorable. Age-related degradation in transformers, is, however, readily monitorable. *Id.* at 21.

Transformers are different than the reactor vessel, containment, and piping because the reactor vessel, containment, and piping perform their intended function without a change in state, configuration or property. Transformers, in contrast, perform their intended function through a change in state. In addition, failure of the reactor vessel, containment, and piping to perform their intended functions may not be readily monitorable, while failure of a transformer to perform its intended function is readily monitorable. *Id.* at 22.

Mr. Mathew and Ms. Ray discuss long-standing guidance in the Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants (NUREG-1800) (NYS000161) that the Staff uses in its review of license renewal applications to determine which components are subject to aging management review. That guidance provides that transformers should be treated as active components. Staff Transformer Testimony at 13.

The Nuclear Energy Institute (“NEI”) provides guidance to licensees seeking license renewal. Mr. Mathew and Ms. Ray cite long-standing guidance that the Staff developed in the course of its review of NEI guidelines for license renewal. (ENT000097). That Staff guidance explains that transformers are similar to switchgear, power supplies, battery charges, and power inverters, all of which have been excluded from aging management review on the grounds that they constitute active components, see 10 C.F.R. § 54.21(a)(i). It states that degradation of a transformer’s ability to perform its intended function is readily monitorable and that measurements taken during surveillance and maintenance provide direct indications

of transformer performance. ENT000097 and Staff Transformer Testimony at 13-15.

Mr. Mathew and Ms. Ray identify and discuss performance monitoring for transformers. Staff Transformer Testimony at 15-16. They also discuss maintenance that is used to address degradation in transformers, *id.* at 17-20, in particular, maintenance required pursuant to the Maintenance Rule at 10 C.F.R. section 50.65, and they identify means of monitoring degradation in transformers. *Id.* at 17-18. They explain that the Maintenance Rule, along with existing monitoring, surveillance, inspection, and testing programs, serves the purpose for electrical transformers that an AMP would serve for a passive component. *Id.* at 20. Because transformers can be adequately monitored and maintained via existing programs, there is no need for an AMP.

V. REBUTTAL

A. NRC Staff Testimony

Mr. Mathew and Ms. Ray rebut Dr. Degeneff's claim (Degeneff Testimony, NYS000003, pp. 17-18) that transformers are like electrical cables because transformers are, essentially, two electrical cables in close proximity to each other. They state that Dr. Degeneff's observation is irrelevant on the question whether transformers are active or passive. They point out that cables perform their intended function without moving parts or a change in state, properties or configuration and are therefore passive. Transformers, however, perform their intended function through a change in state similar to other components that have been specifically identified in the regulation in 10 C.F.R. § 54.21(a)(1)(i) as active components and which do not require aging management programs. Staff Transformer Testimony at 22-23.

Dr. Degeneff asserts that transformers are like pipes, which are passive components, because both of them can change the property of that which passes through them. (NYS000003, pp.18-19). Mr. Mathew and Ms. Ray explain that while a pipe can change the

property of the fluid that travels through it, that is not the function of a pipe. The function of a pipe is to transport fluid from one point to another. The function of a transformer, however, is to transport power and it cannot transport power without a change in current or voltage, or both. Staff Transformer Testimony at 22. Contrary to Dr. Degeneff, transformers are not like pipes.

Mr. Mathew and Ms. Ray counter Dr. Degeneff's assertion (NYS000003, p. 20) that a transformer is like a reactor pressure vessel, containment and steam generator. They explain that functionality for these three components is measured indirectly and that age-related degradation in them is not easily monitored. Transformers, in contrast, are readily monitored and maintained. *Id.* at 22 and 23.

Mr. Mathew and Ms. Ray refute Dr. Degeneff's claim (NYS000003, pp. 22-25) that transformers are not like, inter alia, transistors and power inverters, because these components have control mechanisms that dynamically control the relationship between input and output. They explain that this is not relevant to the determination whether the component is active. Their performance is readily monitorable and gross failure is readily detectable; this is what makes them active components. Moreover, they do not require external controls. And in any event, some transformers do have external controls. Staff Transformer Testimony at 23. If having external controls is what makes a component active, then one could argue that transformers with external controls are active components.

Dr. Degeneff asserts that age-related degradation in a transformer cannot be determined based on changes in performance. (NYS000003, p. 29). Mr. Mathew and Ms. Ray, however, testify that it is possible to monitor transformers for degradation and explain how the insulating oil in a transformer can be analyzed and trended. Staff Transformer Testimony at 17-18.

Dr. Degeneff cites incidents of transformer failure to support his argument that

performance monitoring has not guaranteed against transformer failure. (NYS000003, pp. 38-40). However, as Mr. Mathew and Ms. Ray show, these failures support the proposition that transformer functionality or performance is readily detectable. Gross failure of these transformers was accompanied by fire or explosion, which was readily detectable, or they triggered trips or scrams that alarmed in the control room and were thus readily detectable. Staff Transformer Testimony at 24-25. Thus these incidents of transformer failure do not support the proposition that transformers are passive components. They demonstrate that transformers are, instead, active components because their failure is readily monitorable.

B. Statement of Considerations for License Renewal Rule Revision

The Commission, in the 1995 Statement of Considerations that accompanied the revision of the license renewal rule, discussed the difference between active and passive components at length and in depth, giving numerous examples of the two types of components and, importantly, explaining the rationale for the difference in treatment. Nuclear Power Plant License Renewal; Revisions, Final Rule, 60 Fed. Reg. 22461 (May 8, 1995) (NYS000016). The Statement of Considerations, particularly its rationale for the difference in treatment of active as opposed to passive components, supports the Staff's position that transformers are active components that are not subject to aging management review and do not require an aging management program. Because the functionality and condition of transformers is readily monitorable and adequately addressed through existing regulatory programs, including the Maintenance Rule, transformers do not require aging management review or an aging management program.

The key distinction in the Statement of Considerations between active and passive components is the difference between what is needed to provide reasonable assurance that they will be able to perform their intended functions during the period of license renewal.

[T]he Commission concludes that a specific focus on functionality is appropriate for

performing the license renewal review. Reasonable assurance that the function of important systems, structures, and components will be maintained throughout the renewal period, combined with the rule's stipulation that all aspects of a plant's CLB (e.g. technical specifications) and the NRC's regulatory process carry forward into the renewal period, are viewed as sufficient to conclude that the CLB (which represents an acceptable level of safety) will be maintained. Functional capability is the principal emphasis of much of the CLB and is the focus of the maintenance rule and other regulatory requirements to ensure that aging issues are appropriately managed in the current license term.

60 Fed. Reg. at 22475. To determine what is required to provide reasonable assurance of functionality, the Commission examined how performance and condition are addressed under existing programs, 60 Fed. Reg. at 22474, 22484, and sought "to identify any additional actions that will be needed to maintain the functionality of the systems, structures, and components in the period of extended operation." 60 Fed. Reg. 22464. The Commission determined that for active components, existing programs, including the Maintenance Rule, would be sufficient. 60 Fed. Reg. at 22472. However, the Commission determined that for passive components, those existing programs would not be sufficient and would need to be augmented. 60 Fed. Reg. at 22469. That augmentation takes the form of the aging management review and specific aging management programs. The Commission concluded, "an aging management review of the passive functions of structures and components is warranted to provide the reasonable assurance that their intended functions are adequately maintained during the period of extended operations." 60 Fed. Reg. at 22476.

The Commission acknowledged that it employed the term, "passive" as a "convenience" and that it viewed transistors as "active" components, even though transistors accomplish their intended function without moving parts or a change in configuration or properties. 60 Fed. Reg. at 22477. "[T]he Commission has concluded that a 'change in configuration or properties' should be interpreted to include 'a change in state' which is a term sometimes found in the literature relating to 'passive.'" 60 Fed. Reg. at 22477. NYS' citations to industry definitions of transformers that refer to them as "passive" devices (NYS000006,

NYS000008, NYS000009, NYS000010), are thus unavailing. As the Commission made clear in its Statement of Considerations, description of a component as “passive” is not dispositive. What is dispositive is the way in which functionality and condition are assessed and addressed.

The Commission noted that while active functions could be verified directly, passive functions were less directly verified.

Direct verification of active functions is practical for active functions, such as pump flow, valve stroke time, or relay actuation where the parameter of concern (required function), including any design margins, can be directly measured or observed. For passive functions, the relationship between the measurable parameters and the required function is less directly verified.

60 Fed. Reg. at 22471. The Commission determined that where performance and condition is readily monitorable through existing programs, no additional aging management review was required. *Id.*, see also *Seabrook*, CLI-12-05, 75 NRC ___ (slip op. at 19). Where, however, performance and condition cannot be as readily monitored, additional consideration, via an aging management review, is needed.

[T]he Commission does not believe that it can generically exclude structures and components that (1) Do not have performance and condition characteristics that are as readily monitorable as active components; and (2) Are not subject to periodic replacement.

60 Fed. Reg. at 22476 (emphasis added), see also *Seabrook*, CLI-12-05, 75 NRC at ___ (slip op. at 20).

In the recent *Seabrook* decision, the Commission rejected a contention virtually identical to Contention NYS-8. *Seabrook*, CLI-12-05, 75 NRC ___ (slip op. at 27). The Commission noted that the Statement of Consideration focused on the proposition that active components have moving parts or change configuration or properties and the conclusion in the Statement of Considerations that such components are thus readily monitorable both for performance and condition. *Id.* at 20 n.95. Active components provide clear indications of

gross failure. In the case of transformers, that gross failure takes the form of fire, explosion, reactor trips and/or scrams. Passive components, however, can fail without the failure being apparent until demand or actuation under certain conditions. 60 Fed. Reg. at 22471. The Statement of Considerations gives the example of the passive functions of pressure boundary and structural integrity which “are generally verified indirectly, by confirmation of physical dimensions or components physical condition” and are not directly ascertainable. *Id.*

In the Statement of Considerations, the Commission compared “the extensive experience associated with the performance and condition monitoring of the active functions of structures and components” with the “little experience [that] has been gained from the evaluation of long-term effects of aging on the passive functions of structures and components.” 60 Fed. Reg. at 22471. The Commission concluded that because the detrimental effects of aging that affect passive functions are less apparent than the detrimental effects of aging on active functions, passive components should be subjected to aging management review. *Id.* On the other hand, with respect to active components, the Commission concluded that “existing licensee programs and activities, and the maintenance rule provide the basis for generically excluding structures and components that perform active functions from an aging management review.” *Id.*, see also *Seabrook*, CLI-12-05, (slip op. at 19).

On the basis of consideration of the effectiveness of existing programs which monitor the performance and condition of systems, structures, and components that perform active functions, the Commission concludes that structures and components associated only with active functions can be generically excluded from a license renewal aging management review. Functional degradation resulting from the effects of aging on active functions is more readily determinable, and existing programs and requirements are expected to directly detect the effects of aging. Considerable experience has demonstrated the effectiveness of these programs and the performance-based requirements of the maintenance rule delineated in § 50.65 are expected to further enhance existing maintenance programs.

60 Fed. Reg. at 22471-72.

For passive components, the Commission determined that existing programs, including the Maintenance Rule, were not sufficient to address age-related degradation. The Commission noted that there is minimal preventive maintenance or monitoring for passive components and, therefore, additional programs are necessary to manage age-related degradation for them.

Passive long-lived structures and components that are the focus of the license renewal rule are also within the requirements of the maintenance rule. . . . Treatment of these structures and components, however, under the maintenance rule is likely to involve minimal preventive maintenance or monitoring to maintain functionality of such structures and components in the original operating period. Consequently, under the license renewal rule, the Commission did not allow for a generic exclusion of passive, long-lived structures and components based solely on maintenance activities associated with implementing the requirements of the maintenance rule.

60 Fed. Reg. at 22470-71.

Application of the twin test of monitorability of performance and condition to transformers demonstrates that they are active components that require no aging management review or aging management program. Transformers perform their intended functions through a change in state and thus their performance is readily monitorable. Staff Transformer Testimony at pp. 5-6, 12. The effect of age-related degradation on their condition can be directly monitored and is readily monitorable. Staff Transformer Testimony at pp. 5, 15-17. Accordingly, transformers meet the criteria that identify active components. Because their performance and condition are directly and readily monitorable, they do not require aging management review or an aging management program; existing programs, including the Maintenance Rule, can be relied upon to address degradation they may suffer during the license renewal period. The Idaho National Engineering Laboratory examined aging effects on transformers and concluded:

there is no presently identified transformer aging mechanism that would cause a safety concern. If nuclear plants use currently recognized monitoring and testing methods and follow a rigorous surveillance, testing, maintenance, and replacement program (based on current and future manufacturers and industry guidelines) the effects of

transformer aging will not increase the risk to nuclear plant safety.

NYS000012 at p. ix.

While the Commission identified a number of components as active and passive in the Statement of Considerations for the 1995 rule, it did not identify transformers as a member of either group. It acknowledged that its list of components subject to aging management review and those not subject to aging management review was incomplete. 60 Fed. Reg. at 22479. In response to a commenter who suggested that the Commission provide comprehensive lists of components that are active and passive, the Commission explained aging management review was highly plant- specific. The Commission, therefore, declined to publish a comprehensive list but promised to provide “additional clarification and examples of components requiring an aging management review in its implementation guidance for the rule.” *Id.* and 60 Fed. Reg. at 22485. It provided that guidance in 1997, in a letter from C. Grimes to D. Walters at NEI (ENT000097) (discussed in *Seabrook*, CLI-12-05, 75 NRC at ____ (slip op. at 20-21, 23-24), that provided the promised clarification and examples of components requiring aging management review. In that 1997 letter, the Staff explained its view that transformers are active components that do not require aging management review. The Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants (NUREG -1800) (NYS000161) also classifies transformers as components for which no aging management review is required. Regulatory Guide 1.188, “Standard Format and Content for Applications to Renew Nuclear Power Plant Operating Licenses” (Rev. 1, Sept. 2005) (ENT000099), which approves NEI 95-10, is also consistent with the Staff’s prior stated view that transformers are active components that do not require aging management review.

CONCLUSION

For the reasons discussed above, as supported by the direct prefiled testimony of Mr. Roy Mathew and Ms. Sheila Ray, along with other supporting evidence and exhibits, electrical

transformers are active components; functionality and degradation are readily monitorable; and they are, therefore, not subject to aging management review and do not require an aging management program. Entergy Nuclear Operations Inc.'s license renewal application, which does not include aging management review or an aging management program for electrical transformers, does not violate 10 C.F.R. § 54.21(a) and will not preclude the NRC Staff from making a finding, pursuant to 10 C.F.R. § 54.29, of reasonable assurance that the effects of aging on electrical transformers at Indian Point are will be managed.

Respectfully submitted,

/Signed electronically by/

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Dated at Rockville, Maryland
This 29th day of March 2012

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
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ENTERGY NUCLEAR OPERATIONS, INC.) Docket Nos. 50-247/286-LR
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(Indian Point Nuclear Generating)
Units 2 and 3))

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing NRC STAFF'S INITIAL STATEMENT OF POSITION ON CONTENTION NYS-8 (TRANSFORMERS) (NRC STAFF EXHIBIT NRC000030), NRC STAFF'S TESTIMONY OF ROY MATHEW AND SHEILA RAY CONCERNING CONTENTION NYS-8 (TRANSFORMERS) (NRC STAFF EXHIBIT NRC000031), and NRC STAFF EXHIBITS NRC000032 THROUGH NRC000038, dated March 29, 2012, in the above-captioned proceeding have been served on the following by Electronic Information Exchange this 29th day of March, 2012.

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