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In the Matter of: Entergy Nuclear Operations, Inc. (Indian Point Nuclear Generating Units 2 and 3)
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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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

NRC STAFF'S STATEMENT OF POSITION REGARDING NYS 6/7

INTRODUCTION

Pursuant to 10 C.F.R. § 2.1207(a) and the Licensing Board Scheduling Order (July 1, 2010) (unpublished), as modified,[1] the Staff of the U.S. Nuclear Regulatory Commission ("Staff") submits its initial written statement of position and written testimony with supporting affidavits on New York State (NYS) Consolidated Contentions 6 and 7 (NYS 6/7) which assert that Entergy has not proposed a specific plan for aging management of non-environmentally qualified inaccessible medium-voltage and low voltage cables and wiring. Appended to this filing is the "NRC Staff Testimony of Cliff Doutt and Duc Nguyen Regarding NYS 6/7" and associated Staff Exhibits. For the reasons set forth below and in the testimony filed herewith, the Staff submits that a careful evaluation of NYS 6/7 demonstrates that its challenge to the Entergy Nuclear Operations, Inc. ("Entergy" or "Applicant") application for renewal of the Indian Point Nuclear Generating Units 2 and 3 operating licenses cannot be sustained.

[1] Licensing Board Order (Granting NRC Staff's Unopposed Time Extension Motion and Directing Filing of Status Updates) (Feb. 16, 2012) (unpublished); Licensing Board Order (Extension of Time) (Dec. 14, 2011) (unpublished); Licensing Board Order (Granting Entergy's Motion for Clarification of Licensing Board Memorandum and Order Admitting Contention NYS-38/RK-TC-5) (Dec. 6, 2011) (unpublished); Licensing Board Order (Clarification of Procedures for Evidentiary Filings) (Oct. 18,2011) (unpublished); Licensing Board Order (Denying New York's Motion for an Extension of Time) (Oct. 7, 2011) (unpublished); Licensing Board Order (Procedures for Evidentiary Filings) (Oct. 7, 2011) (unpublished); Licensing Board Amended Scheduling Order (June 7, 2011) (unpublished).

BACKGROUND

On April 23, 2007, Entergy filed its license renewal application ("LRA") to renew the operating licenses for Indian Point Nuclear Generating Units 2 and 3 (“IP2” and “IP3”), for an additional period of 20 years.

On November 30, 2007, petitions for leave to intervene were filed by various petitioners, including the State of New York (“State” or “New York” or "NYS").[2] The State filed two contentions challenging the LRA’s provisions for aging management of non-environmentally qualified ("EQ") inaccessible cables.[3] As set forth in the New York Petition, Contentions 6 is:

> The License Renewal Application For IP2 And IP3 Fails To Comply With The Requirements Of 10 C.F.R. §§ 54.21(a) And 54.29 Because Applicant Has Not Proposed A Specific Plan For Aging Management Of Non-Environmentally Qualified Inaccessible Medium-Voltage Cables And Wiring For Which Such Aging Management Is Required.

New York Petition at 92.

New York State Contention 7 is:

> The License Renewal Application For IP2 And IP3 Fails To Comply With The Requirements Of 10 C.F.R. §§ 54.21(a) And 54.29 Because Applicant Has Not Proposed A Specific Plan For Aging Management Of Non-Environmentally Qualified Inaccessible Low-Voltage Cables And Wiring For Which Such Aging Management Is Required.

Id. at 100.

On July 31, 2008, the Board issued its ruling on standing and the admissibility of contentions, finding, *inter alia*, that New York State 6 and 7 were admissible, and the Board directed that the two contentions be consolidated.[4]

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[2] *See* “New York State Notice of Intention to Participate and Petition to Intervene,” filed November 30, 2007 (“New York Petition”) (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML073400187, ML073400193, and ML073400205).

[3] *See* New York Petition at 92-103.

[4] *Entergy Nuclear Operations, Inc.* (Indian Point, Units 2 and 3), LBP-08-13, 68 NRC 43, 82-86 (2008).

As admitted by the Board, NYS 6/7 challenged the adequacy of Section B.1.23 of the LRA. Section B.1.23 of the original LRA contained a Non-EQ Inaccessible Medium-Voltage Cable Program which it described as a new program that will be consistent with the GALL Report aging management program ("AMP") XI.E3, "Inaccessible Medium-Voltage Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements." Subsequently, by letters dated March 28, 2011 (ex. NYS000151), and July 7, 2011 (ex. NYS000153), the Applicant amended the LRA by*, inter alia*, including low-voltage power cables (400V to 2kV) in the Non-EQ Inaccessible Medium-Voltage Cable Program.

NYS did not formally seek to amend NYS-6/7 in response to the LRA amendments.

On December 15, 2011, New York filed State of New York's Initial Statement of Position [on] Contentions NYS-6 and 7 (ex. NYS000135) ("NYS-6/7 SOP") along with supporting exhibits and testimony. The State does not dispute that an AMP has been provided by Entergy, but the State asserts that the AMP is not sufficiently specific and detailed. NYS-6/7 SOP at 1-2. Additionally, the State asserts that the LRA omits any plan to manage the effects of other localized adverse environments (i.e. "excessive heat"). *Id.* at 2.

DISCUSSION

I. Regulatory Framework

The regulations in 10 C.F.R. Part 54 set forth the safety standards for license renewal. Underlying the Commission's renewal regulations is the principle that each nuclear power plant has a plant-specific current licensing basis ("CLB")[5] 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 Station),

[5] 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 both 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.*

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")).

Pursuant to 10 C.F.R. § 54.29, the Commission may issue a renewed license if the Commission finds:

> (a) Actions have been identified and have been or will be taken with respect to the matters identified in Paragraphs (a)(1) and (a)(2) of this section, such that there is reasonable assurance that the activities authorized by the renewed license will continue to be conducted in accordance with the CLB, and that any changes made to the plant's CLB in order to comply with this paragraph are in accord with the Act and the Commission's regulations. These matters are:
>
> > (1) managing the effects of aging during the period of extended operation on the functionality of structures and components that have been identified to require review under § 54.21(a)(1); and
> >
> > (2) time-limited aging analyses that have been identified to require review under § 54.21(c).
>
> (b) Any applicable requirements of Subpart A of 10 CFR Part 51 have been satisfied.
>
> (c) Any matters raised under § 2.335 have been addressed.

10 C.F.R. § 54.29.

The scope of the license renewal process is limited. *NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), CLI-12-05, 75 NRC __ (March 8, 2012) (slip op. at 2) (*citing N.J. Envtl. Fed'n v. NRC*, 645 F.3d 220, 224 (3d Cir. 2011)). The safety review—and any associated license renewal adjudicatory proceeding—focuses on the detrimental effects of aging posed by long-term reactor operation. *Id.* Applicants must demonstrate "reasonable assurance" that "the effects of aging will be adequately managed so that the intended function(s) will be maintained consistent with the CLB for the period of extended operation." *Id.* at 3.

A. A Commitment to Implement an AMP That Is Consistent With the NRC's Guidance Documents Is Itself an Adequate Demonstration of Reasonable Assurance Under Section 54.29(a)

In reviewing the safety aspect of license renewal applications, the NRC is guided primarily by two documents—the Generic Aging Lessons Learned (GALL) Report[6] and the License Renewal Standard Review Plan ("SRP-LR").[7] *Amergen Energy Company, LLC* (Oyster Creek Nuclear Generating Station), CLI-08-23, 68 NRC 461, 466 (2008).

The SRP-LR assigns review responsibilities among Staff technical organizations and describes methods for identifying those systems, structures, and components (SSCs) that are subject to aging effects within the scope of license renewal review. *Id* at 467. The SRP-LR defines ten aging management program elements--1) scope of program, 2) preventive actions, 3) parameters monitored or inspected, 4) detection of aging effects, 5) monitoring and trending, 6) acceptance criteria, 7) corrective actions, 8) confirmation process, 9) administrative controls, and 10) operating experience -- which are essential to an effective aging management program. *Id.* & SRP-LR Rev. 2 at A.1-3 through A.1-9.

The GALL Report identifies generic aging management programs that the Staff has determined to be acceptable, based on the experiences and analyses of existing programs at operating plants during the initial license period. *Oyster Creek*, CLI-08-23, 68 NRC at 467. The GALL Report was developed because the Staff discovered through reviews of the first sets of license renewal applications that many of the programs the licensee would rely on to manage aging effects during the renewal period were already in place during the initial license period.

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[6] NUREG-1801, Rev. 1, *Generic Aging Lessons Learned (GALL) Report*, (Sept. 2005), Vol. 1 (ADAMS Accession No. ML052770419) & Vol. 2 (ADAMS Accession No. ML052110006) (ex. NYS00146A-C) ("GALL Report Rev. 1"); NUREG-1801, Rev. 2, *Generic Aging Lessons Learned (GALL) Report – Final Report*, (Dec. 2010) (ADAMS Accession No. ML103490041) ("GALL Report Rev. 2") (ex. NYS000147A-D).

[7] NUREG-1801, Rev. 1, *Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants*, (Sept. 2005) (ADAMS Accession No. ML052770566) ("Standard Review Plan" or "SRP-LR Rev. 1") (ex. NYS000195); NUREG-1801, Rev. 2, *Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants*, NUREG-1800, Rev. 2 (Dec. 2010) (ADAMS Accession No. ML103490036) (ex. NYS000161) ("SRP-LR Rev. 2"). Throughout this statement of position, where no revision is provided in the text, the statement provides equally to both revisions of SRP-LR.

Id. at 467 n.15. The report describes each aging management program with respect to the ten program elements defined in the SRP-LR. *Id.* at 467.

As the Commission explained in *Oyster Creek*, the SRP-LR provides that a license renewal application may rely on an AMP that is consistent with the GALL Report, or may use a plant-specific AMP. *Oyster Creek*, CLI-08-23, 68 NRC at 467. Using an AMP identified in the GALL Report (i.e. when an applicant ensures and certifies[8] that its programs correspond to those reviewed in the GALL report) constitutes reasonable assurance that the AMP will manage the targeted aging effect during the renewal period. *Id.* The Commission has recently re-iterated this principal, stating:

> If the NRC concludes that an aging management program (AMP) is consistent with the GALL Report, then it accepts the applicant's commitment to implement that AMP, finding the commitment itself to be an adequate demonstration of reasonable assurance under section 54.29(a).

Seabrook, CLI-12-05, 75 NRC at __ (slip op. at 4) (*citing Entergy Nuclear Vermont Yankee, LLC* (Vermont Yankee Nuclear Power Station), CLI-10-17, 72 NRC 1, 36 (2010); *Oyster Creek*, CLI-08-23, 68 NRC at 467-68.) (emphasis added).

The Commission very recently reversed a Board's decision to admit a contention asserting that the LRA for Seabrook did not contain an adequate or sufficiently detailed plan for aging management of non-environmentally qualified inaccessible electrical cables and wiring. *Seabrook*, CLI-12-05, 75 NRC __, __ (slip op. at 18) (reversing in part and affirming in part LBP-11-2, 73 NRC __ (Feb. 15, 2011)). As will be discussed below, portions of the Commission's decision in *Seabrook* are applicable to the underlying claims of NYS 6/7. For example, the Commission discussed, *inter alia,* the existence of cable testing methods that are specifically

[8] The Commission has emphasized that it is neither possible nor necessary for the Staff to verify each and every factual assertion in LRAs, but the Commission's regulations require that an LRA be complete and accurate in all material respects, and submitted under oath. *Oyster Creek*, CLI-08-23, 68 NRC at 480-481. Nevertheless, and as demonstrated by the attached testimony, the NRC does not simply take the applicant at its word. When an applicant claims consistency with the GALL Report, the Staff draws its own independent conclusion. *See Vermont Yankee*, CLI-10-17, 72 NRC at 37.

referenced in the GALL Report model AMP. *Id.* at __ (slip op. at 13). Regarding identifying the extent and location of non-EQ inaccessible cables, the Commission discussed how a "commodity group" approach can be used and observed that the petitioner in *Seabrook* never "offered a reason or other unmet need that would require us to mandate inclusion of the exact location of each cable in the Seabrook license renewal application." *Id.* at __ (slip op. at 16-17). The Commission found that a general claim that the NRC should require license renewal applicants to preclude moisture from affecting non-EQ inaccessible cables was an impermissible request for additional requirements beyond those present in the regulations. *Id.* at __ (slip op. at 17-18).

B. Burden of Proof

In the Commission's adjudications,

> [t]he ultimate burden of proof on the question of whether the permit or the license should be issued is … upon the applicant. But where … one of the other parties contends that, for a specific reason … the permit or license should be denied, that party has the *burden of going forward* with evidence to buttress that contention. Once [the party] has introduced sufficient evidence to establish a *prima facie* case, the burden then shifts to the applicant who, as part of [its] overall burden of proof, must provide sufficient rebuttal to satisfy the Board that it should reject the contention as a basis for denial of the permit or license.

AmerGen Energy Company, LLC (Oyster Creek Nuclear Generating Station), CLI-09-7, 69 NRC 235, 269 (quoting *Louisiana Power and Light Co.* (Waterford Steam Electric Station, Unit 3), ALAB-732, 17 NRC 1076, 1093 (1983), quoting *Consumers Power Co.* (Midland Plant, Units 1 and 2), ALAB-123, 6 AEC 331, 345 (1973) (emphasis in original))

II. Staff Position on Contention NYS-6/7

The NRC Staff's Testimony of Clifford Doutt and Duc Nguyen Concerning Contention NYS-6/7 ("test.") (ex. NRC000077) presents the Staff's position that the concerns raised in Contention NYS-6/7 lack merit. Test. at A4 (ex. NRC000077). Entergy's LRA demonstrates that the effects of aging on the functionality of medium and low voltage non-EQ inaccessible

cables will be adequately managed during the period of extended operations as required by 10 C.F.R. § 54.21(a)(1). *Id.* NYS has failed to provide facts supporting the contention that the AMP described in the LRA is insufficient, and that additional activities should be specified. *Id.*

In accordance with the Board's July 1, 2010 Scheduling Order, the Staff has targeted its testimony to be responsive to NYS's testimony.

A. Staff Witnesses

In the attached testimony of Mr. Duc Nguyen and Mr. Cliff Doutt (ex. NRC000077), two highly-qualified witnesses explain why the information in the LRA on aging management of non-EQ medium and low voltage cables (together, "power" cables) provides an adequate demonstration of reasonable assurance under section 10 C.F.R. 54.29(a), and that the additional information requested through Contention NYS-6/7 is not necessary.

Mr. Duc Nguyen has 22 years of experience in the nuclear power industry regulation including pressurized water reactors ("PWRs") as well as boiling water reactors ("BWRs"). *See* Duc Nguyen Statement of Professional Qualifications (ex. NRC000079). He has acquired extensive knowledge and experience in electrical engineering, instrumentation and controls, operations, inspection, maintenance, and licensing and regulation of the nuclear industry. Mr. Nguyen has reviewed and evaluated compliance of electric power system and instrumentation and control designs with regulatory requirements. He conducted reviews and authored safety evaluations, interim staff guidance, information notices, and other generic communications. Mr. Nguyen has conducted twenty-four license renewal audits, and participated in electrical distribution system functional inspections, and system based instrumentation and control inspections. He is knowledgeable in the areas of power distribution systems and the operation and safety functions associated with reactor protection systems and engineered safety features. He developed interim staff guidance ("ISG") on certain aging management programs, including ISG-2007-02, Change to GALL AMP XI.E6, Electrical Cable Connections Not Subject to Environmental Qualification Requirements. He also assisted in revising the GALL Report from

Rev. 1 to Rev. 2 in the areas of aging management reviews ("AMRs"), aging management programs ("AMPs"), and time limited aging analysis ("TLAA") for electrical and instrumentation and control systems. Mr. Nguyen also contributed to updates to the corresponding sections of the SRP-LR.

Mr. Clifford Doutt has 33 years of experience in the nuclear power industry, including 22 years with the NRC. *See* Cliff Doutt Statement of Professional Qualifications (ex. NRC000078). Mr. Doutt has obtained significant experience in the areas of instrumentation and control, electrical engineering, and regulation of the nuclear industry, including licensing, inspection, and maintenance. Mr. Doutt has also participated on standards committee working groups involved with digital systems, instrumentation setpoints, safety system criteria, and single failure criteria. He has participated in reviews or audits of more than fifteen license renewal applications, during which he developed audit reports, authored requests for additional information, and wrote portions of Staff safety evaluation reports. His areas of specialty include the AMPs for: cables and connections; inaccessible cables; metal-enclosed buses; fuse holders; electrical cable connections; and environmental qualification (EQ) programs. He was the Staff's lead for the update to the electrical portion of the GALL Report from Rev. 1 to Rev. 2, which integrated Staff license renewal experience obtained during LRA reviews, audits, inspections, interim staff guidance, industry operating experience, stakeholder comments, and updated standards and guidance.

B. Summary of Staff Position: The LRA Is Adequate to Support a Request for a Renewed License Under 10 C.F.R. §§ 54.21(a)(1) and 54.29

The Staff finds that Entergy's AMP for non-EQ inaccessible low and medium voltage power cables exposed to significant moisture demonstrates that the effects of aging on the cables' intended function will be adequately managed for the period of extended operation. Test. at A30 (ex. NRC000077). The Applicant wrote its AMP to be consistent with the GALL Report Rev. 1, and subsequently GALL Report Rev. 2. As the Commission has recently

reiterated on a similar contention in the *Seabrook* proceeding, a license renewal applicant who commits to implement an AMP that is consistent with the corresponding AMP in the GALL Report has demonstrated reasonable assurance under 10 C.F.R. § 54.29(a) that the aging effects will be adequately managed during the period of extended operation. *Seabrook*, CLI-12-05, 75 NRC at __ (slip op. at 18); Test. at A4 (ex. NRC000077).

Contrary to the NYS-6/7, it is not necessary for Entergy to describe: A) the corrective actions the Applicant will take if inspections reveal that water is accumulating in manholes or other accessible locations of inaccessible cable circuits, B) the characteristics of the relevant cables and associated cable testing methods, C) whether it will select tests with trendable results where possible, D) the cable testing acceptance criteria, E) the corrective actions for discovery of degraded cable insulation, or F) to demonstrate that it will be capable of testing all non-EQ inaccessible power cables prior the period of extended operation. *Seabrook*, CLI-12-05, 75 NRC at __ (slip op. at 18).

Also contrary to the position of New York, it is not necessary for Entergy to provide an AMP for non-EQ inaccessible power cables exposed to "excessive heat" or, as New York describes it, "heat above their rated temperature" (NYS-6/7 SOP at 5) because "excessive heat" is not an expected adverse localized environment that could age non-EQ inaccessible power cables. New York's "excessive heat" claim refers to heat beyond the levels anticipated in the plant's current design and licensing bases. Test. at A4 (ex. NRC000077). Further, the claim that the NRC should require license renewal applicants to preclude beyond design basis "excessive heat" from affecting non-EQ inaccessible cables is an impermissible request for additional requirements beyond those present in the regulations. *See Seabrook*, CLI-12-05, 75 NRC at __ (slip op. at 17-18).

C. New York's Positions are Incorrect

The Staff reviewed the challenges presented in NYS-6/7. As described below, the specific challenges cannot be sustained in light of the regulations as interpreted by the Commission's case law.

1. New York's Understanding of the Meaning of "Environmental Qualification" as Used in the NRC's Regulations Is Incorrect

In their testimony, the Staff's witnesses explain the meaning of environmental qualification. Test. at A7 (ex. NRC000077). The requirements for environmental qualification of electrical equipment important to safety for nuclear power plants are described in 10 C.F.R. § 50.49. The requirements apply to listed types of equipment important to safety that are relied upon following design basis events (e.g. conditions of normal operation, anticipated operational occurrences, design basis accidents, external events, and natural phenomena) to ensure the integrity of the reactor coolant pressure boundary, the capability to shut down the reactor and to maintain it in a safe shutdown condition, to prevent or mitigate the consequences of accidents, or to mitigate an accident. 10 C.F.R. § 50.49(b)(1)-(3). Environmental qualification of electric equipment important to safety located in a mild environment is not included within the scope of § 50.49. 10 C.F.R. § 50.49(c). A mild environment is an environment that would at no time be significantly more severe than the environment that would occur during normal plant operation. *Id.*

The Staff explains how NYS misunderstands the NRC's regulations governing environmental qualification in 10 C.F.R. § 50.49(e). Test. at A8 (ex. NRC000077). Mr. Bascom's understanding of how the NRC uses the term "environmentally-qualified" is incorrect and inconsistent with the Commission's regulations. This misunderstanding led NYS to conclude that non-EQ cables were potentially "exposed to heat above their rated temperature." Test. at A9 (ex. NRC000077). In fact, non-EQ cables were designed for the environment in which they are used. The non-EQ rating is not related to the cable's ability to withstand its

operating environment. Instead it is a reflection that the cables are in an environment that does not become harsh after an accident, i.e. a mild environment. Thus, NYS' claim that a cable may pass through an environment "hotter than it was designed to withstand" (NYS-6/7 SOP at 26-27) is legally and logically flawed, being premised on a misunderstanding of the significance of environmental qualification. Test. at A8 & A9 (ex. NRC000077).

2. A Commitment to Implement an AMP That Is Consistent With the GALL Report Is an Adequate Demonstration of Reasonable Assurance Under Section 10 C.F.R. § 54.29(a)

NYS summarizes Entergy's AMP for inaccessible non-EQ medium and low voltage cables. NYS-6/7 SOP at 14. NYS observes that the AMP requires:

> (i) periodic inspection of manholes for water accumulation based on specific operating experience with water accumulation but at least annually, ...;
>
> (ii) event[-]driven inspections of manholes after heavy rain or flooding;
>
> (iii) increased frequency of periodic manhole inspections if necessary based on previous inspection results;
>
> (iv) cable testing at least every six years, instead of every ten, to provide information about the condition of the conductor insulation; and
>
> (v) increased frequency of periodic cable testing, if necessary, based on test results and operating experience.

NYS-6/7 SOP at 14 (*citing* Entergy March 28 Response (ex. NYS000151)). NYS also acknowledged that Entergy's revised AMP states that it will be implemented prior to the period of extended operation, which is consistent with NRC guidance. *Id.* NYS acknowledges that the "AMP specifically incorporates [GALL Report, Rev. 2's] more stringent versions of the specific requirements that were contained in the 2005 GALL." *Id.* at 15-16.

NYS asserts that the Applicant’s commitment to implement an AMP consistent with the program in the GALL Report is not a sufficient demonstration for purposes of 10 C.F.R. §§ 54.21(a)(1) and 54.29, and is thus legally deficient. *Id.* at 16.

In fact, the Commission in *Seabrook* indicated that if an AMP is consistent with the GALL, then the NRC accepts the applicant's commitment to implement that AMP as an adequate demonstration of reasonable assurance under section § 54.29(a). *Seabrook*, CLI-12-05, 75 NRC at __ (slip op. at 4); Test. at A4 (ex. NRC000077). The Commission observed that "referencing an AMP in the GALL Report does not insulate that program from challenge in litigation" (*id.* at ___ (slip op. at 18)), but as discussed below, NYS has not challenged the program.

Rather than challenging the adequacy of the program in the GALL Report, NYS simply argues that more information is needed. For example, NYS states that the GALL Report "simply provides a list of methods from which the Application must [choose]," but in NYS' view, the application must describe the selected method. NYS-6/7 SOP at 19. Thus, NYS is demanding more than what the Commission requires as a demonstration under 10 C.F.R. § 54.29(a), and therefore NYS's contention cannot be legally sustained. Additionally, many of NYS' arguments are based upon speculation about what might be done incorrectly, rather than any factual demonstration of error. For example, NYS-6/7 SOP, at 21, describes a particular test, notes that it is neither included nor excluded in the GALL, but then makes the speculative leap that Entergy will not select the test. The Staff's witnesses describe that, in fact, the GALL Report gives great latitude on test selection, stating, in part, that the applicant can assess

> the condition of the cable insulation with reasonable confidence using one or more of the following techniques: Dielectric Loss (Dissipation Factor/Power Factor), AC Voltage Withstand, Partial Discharge, Step Voltage, Time Domain Reflectometry, Insulation Resistance and Polarization Index, Line Resonance Analysis, or other testing that is state-of-the-art at the time the tests are performed.

GALL Report, Rev. 2, at XI E3-2; Test. at A15 (ex. NRC000077).

NYS admits that tests listed in the AMP in the GALL Report do not exclude the test of interest to NYS. The mere speculation that a test might not be used is insufficient to meet the standards in *Seabrook* on what is needed to challenge the AMP in the GALL Report, and thus

NYS-6/7 cannot be sustained. Similarly, where NYS expresses speculative concerns with trending (NSY-6/7 SOP at 21-23) and corrective actions (*id.* at 22-23), NYS does not explain why the AMP in the GALL Report is deficient, and thus NYS' claims fail to meet the standard articulated by the Commission in *Seabrook*.

NYS also presents concerns with the amount of time remaining prior to the period of extended operation to perform testing. NYS-6/7 SOP at 24-25. Again, this speculative concern with implementation is again contrary to the Commission's holding that a commitment to implement the AMP is a sufficient demonstration under 10 C.F.R. § 54.29(a). *Seabrook*, CLI-12-05, 75 NRC at __ (slip op. at 4).

3. Additional Details in the LRA are Unnecessary

The Staff's witnesses reviewed the areas where NYS claimed the AMP was lacking. As described below, the specific information which NYS claims is necessary is not, in fact, needed for the Staff to make a judgment on the technical merits of Entergy's AMP.

a. Details on Corrective Actions Are Not Needed to Demonstrate That the Effects of Aging Will Be Adequately Managed

NYS acknowledges that the AMP provides for event-driven inspections of manholes after rain or flooding. *See* NYS-6/7 SOP at 14 (ex. NYS000135). NYS asserts that Entergy must describe the corrective actions it will take if inspections reveal that water is accumulating in accessible locations of inaccessible cable circuits. *Id.* 17-18. The Staff explains how there is no merit to NYS's speculation about repetitive failures. Test. at A28 (ex. NRC000077). Corrective actions are fact-dependent, not one-size-fits-all. *Id.* As described in the GALL Report, there are many factors that must be considered when formulating corrective actions, including: the significance of the test results, the operability of the component, the potential root cause, the likelihood of recurrence, and whether the same condition or situation is applicable to other inaccessible, in-scope power cables. *Id.* The LRA describes that if the test acceptance

criteria are not met, the requirements of 10 CFR Part 50, Appendix B, will be used to address corrective actions. The Staff reviewed the corrective actions program, and concluded that the quality assurance (QA) attribute "corrective action" of the Applicant's programs is consistent with 10 C.F.R. § 54.21(a)(3). *Id.* (citing SER at 3-220 to 3-222 (ex. NYS000326C)).

b. The Characteristics of the Relevant Cables and the Associated Cable Testing Methods are Unnecessary

NYS asserts that Entergy must include additional descriptions of the non-EQ inaccessible cables, and the tests to be used upon those cables. NYS-6/7 SOP at 18-21 (ex. NYS000135). NYS speculates that Entergy might not select the right cable test. NYS SOP at 21 (ex. NYS000135).

The Staff finds that there is no merit to NYS' claim that additional information is needed. The GALL Report allows the specific type of test performed to be determined prior to the initial test, but requires that it be a proven test for detecting deterioration of the insulation system due to wetting. Test. at A.23 - A28 (ex. NRC000077).

In *Seabrook,* addressing a proffered contention very similar to NYS 6/7, the Commission noted that the intervenor in Seabrook failed to explain why this portion of the AMP (i.e. the portion to use a state-of-the-art test when the test is performed) was inadequate. *Seabrook*, CLI-12-5, 75 NRC at __ (slip op. at 12-13). Here, NYS' position is essentially that Entergy must select the right test, which is, of course, a position in line with Entergy and the Staff. However, the additional information sought by NYS, *viz.* the cable characteristics, is unnecessary. The LRA submitted by Entergy treated the cables as a commodity group. Test. at A23 (ex. NRC000077) This approach, which is the same approach used by the licensee in *Seabrook*, allows for an AMP to efficiently treat similar cables and tests in a site-wide and consistent manner. *Id.* The approach makes it unnecessary for a lengthy list of cables and materials to be included. *Id.*

Contrary to NYS' assertion that details on the characteristics of the cables are necessary, the Staff's witnesses explain that the commodity approach controls the scoping; once scoped in as a commodity group, the tests and testing methods will be consistent with the GALL Report, which provides general descriptions of acceptable techniques typical of the power industry. Test. at A26 (ex. NRC000077). The Staff does not find it necessary for LRAs to include current finalized detailed procedures for the Staff to review and approve given the latitude provided for using "state of the art" tests in the future. Test. at A15 (ex. NRC000077). Instead, Entergy's LRA committed to complete the implementation process using cables as a commodity group, and to put the programs and procedures into place prior to the period of extended operation. *Id.* at A23 (ex. NRC000077).

c. An Explanation of Test Selection and Trending Is Unnecessary

NYS asserts that Entergy must indicate if the tests are trendable. NYS-6/7 SOP at 21-22. NYS directly acknowledges that the AMP described in the GALL Report includes trending, but seeks assurance that trendable tests will be used wherever possible. *Id.* NYS' concern is that Entergy has not demonstrated that it will proactively repair or replace degrading cables whenever possible and thus prevent them from failing during operation when safety functions may be compromised. *Id.* at 22.

The Staff does not find it necessary for LRAs to include any additional information on trending. First, regarding failures during operation and compromising safety, the Commission's regulations in 10 C.F.R. § 50.36 governing the licensee's technical specifications (a part of the CLB) directly address how to maintain safety in the event of equipment failures. Specifically, whenever the lowest functional capability or performance levels of equipment required for safe operation is not met, the licensee "shall shut down the reactor or follow any remedial action permitted by the technical specifications until the condition can be met." 10 C.F.R. § 50.36(c)(2)(i).

Second, the purpose of an AMP is, of course, to manage aging. To the extent that NYS is demanding that Entergy preclude failures by pre-emptive replacement, it is demanding an elevation of the burden upon Entergy from managing aging effects to precluding aging effects, a position squarely rejected by the Commission in *Seabrook*. *Seabrook*, CLI-12-5, 75 NRC at __ (slip op. at 17-18).

Third, the Staff has reviewed the trending element of the AMP and found it to be acceptable. Test. at A14 (ex. NRC000077). Last, the tests will be "state of the art." *Id.* at A15.

d. A Description of Test Acceptance Criteria Is Unnecessary

NYS argues that Entergy must include the acceptance criteria it will use, such that it will know when to take corrective action. NYS-6/7 SOP at 22-23. There is no merit to NYS' claim that additional information is needed. Although the specific test method is not identified by the Applicant, the determination of what test method and associated acceptance criteria would be appropriate will be determined by the Applicant based on NRC and industry standards and guidance prior the period of extended operation. Because the acceptance criteria for each test are defined by the specific type of test performed and the specific cable tested, specifying acceptance criteria in the LRA is not appropriate. Test. at A27 (ex. NRC000077). As described in the GALL Report, which is being followed by the LRA, the selected test will be "state-of-the-art at the time the test is performed." Gall Report, Section XI.E3, Element 3 "Parameters Monitored/Inspected."

e. A Description of Corrective Actions for Discovery of Degraded Insulation Is Not Needed

NYS argues Entergy must provide its corrective actions for degraded insulation. NYS-6/7 SOP at 23-24 (ex. NYS000135). NYS' argument is a restatement of its previous claims regarding acceptance criteria and testing methods. *Id.* at 24. NYS fully acknowledges that the AMP in the GALL offers a range of corrective actions. *Id.* More significantly, NYS fully acknowledges that corrective actions are fact-dependent. *Id.* As previously stated, corrective

actions are fact-dependent, not one-size-fits-all. Test. at A28 (ex. NRC000077). No purpose would be served with requiring the LRA to include a table or list specifying all corrective actions for all conditions adverse to quality. *Id*. As described in the GALL Report, there are many factors that must be considered when formulating corrective actions. *Id.*

The Staff reviewed the Applicant's corrective actions program, and concluded that the QA attribute "corrective action" of the Applicant's program is consistent with 10 C.F.R. § 54.21(a)(3). Test. at A28 (citing SER at 3-220 to 3-222 (ex. NYS000326C)) (ex. NRC000077).

f. A Test Schedule Is Not Needed

NYS argues that Entergy must show it can meet its testing schedule. NYS SOP at 24-25. However, Entergy has committed to test the in-scope cables prior to the period of extended operation, and the completion of the inspections is subject to NRC inspection. The NRC does not require the LRA to include a detailed schedule of testing to demonstrate that the testing will be done; the application contained a commitment, and that commitment provided the requisite demonstration to the Staff. Test. at A22 (ex. NRC000077). The Staff will use inspection procedure IP 71003, Post Approval Site Inspection for License Renewal (ML082830294) (ENT000251) to verify, on a sampling basis, that commitments are completed. *Id.*

4. The AMP Does Not Need to Address "Excessive Heat"

NYS argues that the AMP must address "excessive heat." NYS-6/7 SOP at 25-28 (ex. NYS000135). Mr. Bascom states that the ambient temperature around the cables could be greater than the cable was designed to withstand because of an external source such as a steam line, hot water pipe, or inadequate ventilation. Bascom PFT at 30 (ex. NYS000136). The Staff notes that these external sources are not typically near inaccessible non-EQ power cables. Test. at A29 (ex. NRC000077). The NRC's significant research in the area of license renewal reviews and aging concerns has not shown the issues discussed by Mr. Bascom to be a concern at operating plants. *Id.* AMPs other than the non-EQ inaccessible cable AMP directly address the issue of adverse localized environments caused by heat, radiation, or moisture, but

the available data and information do not identify heat as a significant concern for the inaccessible non-EQ cables. *Id.*

Mr. Bascom's concerns based on SAND96-0344 do not withstand scrutiny, and are inapplicable for thermal embrittlement of inaccessible non-EQ power cables. Test. at A29 (ex. NRC000077). The cable's original design, selection, and installation, which would have considered the ampacity limits, conductor size and resistance, cable material, installation geometry, and ambient temperature in which the cable operates, thus addressing (or precluding) localized hot spots. *Id.*

CONCLUSION

For the reasons stated above, the Staff's position is that the LRA is adequate with respect to the AMP for medium and low voltage cables. Accordingly, NYS 6/7 should be resolved in favor of the Applicant.

Respectfully submitted,

/Signed (electronically) by/

_____

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Dated at Rockville, Maryland
this 30th day of March 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. 50-247/286-LR
	)	
(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-6/7 (NRC STAFF EXHIBIT NRC000076), NRC STAFF'S TESTIMONY OF CLIFFORD DOUTT AND DUC NGUYEN CONCERNING CONTENTION NYS-6/7 (NRC STAFF EXHIBIT NRC000077), and NRC STAFF EXHIBITS NRC000078 THROUGH NRC000079, dated March 30, 2012, in the above-captioned proceeding have been served on the following by Electronic Information Exchange this 30th day of March, 2012.

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