Entergy Nuclear Northeast
Indian Point Energy Center
450 Broadway, GSB
P.O. Box 249
Buchanan, NY 10511-0249
Tel (914) 254-2055

Fred Dacimo
Vice President
Operations License Renewal

NL-14-146

December 15, 2014

U.S. Nuclear Regulatory Commission
Document Control Desk
11545 Rockville Pike, TWFN-2 F1
Rockville, MD 20852-2738

SUBJECT: Amendment 16 to License Renewal Application (LRA)
Indian Point Nuclear Generating Unit Nos. 2 and 3
Docket Nos. 50-247 and 50-286
License Nos. DPR-26 and DPR-64

REFERENCES
1. Entergy Letter dated April 23, 2007, F. R. Dacimo to Document Control Desk, "License Renewal Application" (NL-07-039)
2. Entergy Letter dated April 23, 2007, F. R. Dacimo to Document Control Desk, "License Renewal Application Boundary Drawings" (NL-07-040)
3. Entergy Letter dated April 23, 2007, F. R. Dacimo to Document Control Desk, "License Renewal Application Environmental Report References" (NL-07-041)
4. Entergy Letter dated October 11, 2007, F. R. Dacimo to Document Control Desk, "License Renewal Application (LRA)" (NL-07-124)
5. Entergy Letter dated November 14, 2007, F. R. Dacimo to Document Control Desk, "Supplement to License Renewal Application (LRA) Environmental Report References" (NL-07-133)

Dear Sir or Madam:

In the referenced letters, Entergy Nuclear Operations, Inc. applied for renewal of the Indian Point Energy Center operating licenses. This letter contains Amendment 16 of the License Renewal Application (LRA).

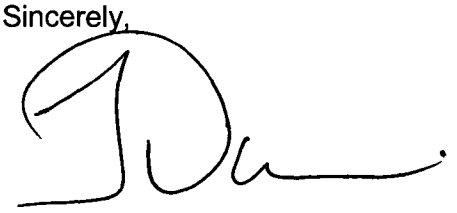
Should you have any questions concerning this report, please contact Mr. Robert W. Walpole, Regulatory Assurance Manager, at (914) 254-6710.

A128
NRR

I declare under penalty of perjury that the foregoing is true and correct. Executed on

12/15/14.

Sincerely,



FRD/rl

Attachment 1. Annual Update Amendment

cc: Mr. Daniel H. Dorman, Regional Administrator, NRC Region I
Mr. Sherwin E. Turk, NRC Office of General Counsel, Special Counsel
Mr. Dave Wrona, NRC Branch Chief, Engineering Review Branch I
Ms. Kimberly Green, NRC Sr. Project Manager, Division of License Renewal
Mr. Douglas Pickett, NRR Senior Project Manager
Ms. Bridget Frymire, New York State Department of Public Service
NRC Resident Inspector's Office
Mr. John B. Rhodes, President and CEO NYSERDA

ATTACHMENT 1 TO NL-14-146

Annual Amendment

ENTERGY NUCLEAR OPERATIONS, INC.
INDIAN POINT NUCLEAR GENERATING UNIT Nos. 2 and 3
DOCKET NO. 50-247 and 50-286

ATTACHMENT 1 TO NL-14-146

Annual Amendment

ENTERGY NUCLEAR OPERATIONS, INC.
INDIAN POINT NUCLEAR GENERATING UNIT Nos. 2 and 3
DOCKET NO. 50-247 and 50-286

INDIAN POINT NUCLEAR GENERATING UNIT Nos. 2 AND 3
LICENSE RENEWAL APPLICATION
ANNUAL AMENDMENT

In accordance with 10 CFR 54.21(b), each year following submittal of the license renewal application and at least 3 months before scheduled completion of the NRC review, an amendment to the renewal application must be submitted that identifies any change to the CLB of the facility that materially affects the contents of the license renewal application (LRA), including the FSAR supplement. This attachment is the required annual amendment to the LRA.

Amendment 16 is based on a review of documents potentially affecting the CLB during the periods of September 1, 2013 through August 31, 2014.

The review concluded that certain sections of the LRA are affected by changes to the CLB. Other minor changes are provided to correct typographical errors discovered in the LRA. The table below summarizes the changes and effects on the LRA, and identifies the affected LRA section.

LRA Sections Affected

Change	LRA Section Affected
IP1 - Engineering Change 32468 Partial removal of the IP1 vent stack. Stack deleted from LRA scope.	Table 2.2-3 Table 2.4-3 Section 2.4.3 Table 3.5.2-3 A.2.1.35 A.3.1.35 B.1.36
IP2 - Engineering Change 48136 Conversion of Temp Mod EC-30870 into a permanent change. Change added SS flex hose to the SW system at the circulating water pumps.	Table 3.4.2-5-9-IP2
IP2 - Engineering Change 42090 Provide ASSS signals from the fan house to the U2 CCR (Unit 1 Turbine Supervisory Panel) to resolve OMA # 9 and # 10. Change added tubing and valves to provide new SOV's controlled from the CCR to bypass the existing manual containment isolation valves to allow the instrument air	Section 2.3.2.5 Table 3.2.2-5-IP2

Change	LRA Section Affected
flow to reach the Fan House Safe Shut Down Panel in case of fire inside containment.	
IP2 - Engineering Change 40404 Relocate 21 charging pump control TRSW from 480V switchgear room to the CCR and install solenoid and its control in CCR to resolve U2-OMA 20 and 21. Change modified air supply to speed controller for charging pump 21. (System description change only)	Section 2.3.3.4 (IP2)
Engineering Change 26987 IP2 Zurn strainer sump pump 26 discharge line isolation valve Change added valve (material added)	Table 3.3.2-19-8-IP2
Dwg 9321-20333 (EC-47676) SW Pump Vacuum Breaker Valves SWN-1251 thru SWN-1254 added to dwg and EDB. EDB shows added valves are new material (cast iron).	Table 3.3.2-2-IP3
IP2/3 UFSAR Appendix A Correction of typographical errors	A.0 A.2.0 A.2.1.5 A.2.1.11 A2.1.16 A2.1.17 A2.1.19 A2.1.23 A2.1.26 A2.1.28 A2.1.41 A.2.2.1.3 A.2.2.2.1 A.2.2.6

Change	LRA Section Affected
IP2 LRA Appendix B Alignment of Appendix B with Appendix A typographical changes	B.1.20 B.1.24
IP2 - Engineering Change 39129 IP2 UFSAR IP2 Tech Specs IP2 TRM IP2 Amendment #274 (NL-13-001 & RA-14-034 & IP2 UFSAR Change Package 04-03-001) Revised reactor vessel heatup and cooldown curves and LTOPs technical specifications for 48 EFPY operation and low temperature over pressure system setting requirements	Section 4.2.3 Section A.2.2.1.2
IP2 Engineering Change 52627 Component FP-1227 located in the IP1 utility tunnel had previously been designated safety-related has been reclassified as nonsafety-related. Therefore, sewage piping adjacent to FP-1227 within the tunnel is no longer designated nonsafety-related systems and components affecting safety-related systems. Thus, this sewage piping is no longer within the scope of license renewal and not subject to aging management review.	Section 2.3.3.19

IPEC LRA changes are shown below.

(Changes are shown as strikethroughs for ~~deletions~~ and underlines for additions)

Table 2.2-3
Structures within the Scope of License Renewal

Structure Name	LRA Section
~~Superheater Stack (IP1)~~	~~Section 2.4.3, Turbine Buildings, Auxiliary Buildings, and Other Structures~~

2.4.3 Turbine Buildings, Auxiliary Buildings, and Other Structures

Description

The following structures are included in this evaluation.

- ~~Superheater Stack (IP1)~~

~~*Superheater Stack (IP1)*~~

~~The superheater stack is located on top of the superheater building. The steel stack carries the exhaust from the superheaters and also supports a ventilation duct carrying the exhaust from the containment structure. The failure of the stack could result in damage to the Unit 2 control building, the emergency diesel generator building, and in-scope Unit 3 structures. To minimize this risk, the stack was shortened and its support structure reinforced to satisfy IP3 tornado protection criteria.~~

~~The stack is constructed of riveted steel plates of varying thicknesses and has an inner lining of granite. A carbon steel ventilation duct inside the stack rises and extends a distance above the top of the stack. The stack is support by structural steel framing and access is provided by metal grating platforms along the height of the stack.~~

~~This structure has the following intended functions for 10 CFR 54.4(a)(1) and (a)(2).~~

- ~~Maintaining integrity such that safety-related equipment is not affected.~~

~~This structure has no intended functions for 10 CFR 54.4(a)(3).~~

Table 2.4-3
Turbine Buildings, Auxiliary Buildings, and Other Structures
Components Subject to Aging Management Review

Component	Intended Function[1]
Steel and Other Metals	
~~Superheater stack~~	~~Support for Criterion (a)(2) equipment~~

Table 3.5.2-3

Turbine Building, Auxiliary Building, and Other Structures Structural Components and Commodities Summary of Aging Management Review

Table 3.5.2-3: Turbine Building, Auxiliary Building, and Other Structures Structural Components and Commodities (IP2 and IP3)								
Structure and/or Component or Commodity	**Intended Function**	**Material**	**Environment**	**Aging Effect Requiring Management**	**Aging Management Programs**	**NUREG-1801 Vol. 2 Item**	**Table 1 Item**	**Notes**
~~Superheater stack~~	~~SNS~~	~~Carbon steel~~	~~Air – outdoor~~	~~Loss of material~~	~~Structures Monitoring~~	~~III.A3-12 (T-11)~~	~~3.5.1-25~~	~~C~~

A.2.1.35 Structures Monitoring Program

The Structures Monitoring Program is an existing program that performs inspections in accordance with 10 CFR 50.65 (Maintenance Rule) as addressed in Regulatory Guide 1.160 and NUMARC 93-01. Periodic inspections are used to monitor the condition of structures and structural commodities to ensure there is no loss of intended function.

The Structures Monitoring Program will be enhanced to include the following.

- Appropriate procedures will be revised to explicitly specify that the following structures are included in the program.

  - ~~superheater stack~~

A.3.1.35 Structures Monitoring Program

The Structures Monitoring Program is an existing program that performs inspections in accordance with 10 CFR 50.65 (Maintenance Rule) as addressed in Regulatory Guide 1.160 and NUMARC 93-01. Periodic inspections are used to monitor the condition of structures and structural commodities to ensure there is no loss of intended function.

The Structures Monitoring Program will be enhanced to include the following.

- Appropriate procedures will be revised to explicitly specify that the following structures are included in the program.

  - ~~superheater stack~~

B.1.36 STRUCTURES MONITORING

Enhancements

The following enhancements will be implemented prior to the period of extended operation.

Attributes Affected	Enhancements
1. Scope of Program	Appropriate procedures will be revised to explicitly specify that the following structures are included in the program. • ~~superheater stack~~

Table 3.4.2-5-9-IP2
Service Water System
Components Required to Support AFW Pump Room Fire Event
Summary of Aging Management Review

Table 3.4.2-5-9-IP2 Service Water System (SW)								
Component Type	**Intended Function**	**Material**	**Environment**	**Aging Effect Requiring Management**	**Aging Management Programs**	**NUREG-1801 Vol. 2 Item**	**Table 1 Item**	**Notes**
Flex hose	Pressure boundary	Stainless steel	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.F1-1 (A-09)	3.3.1-27	E
Flex hose	Pressure boundary	Stainless steel	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-15 (A-54)	3.3.1-79	A

2.3.2.5 Containment Penetrations

System Description

Containment penetrations is not an independent system but is a grouping of containment penetration components not evaluated with other systems. Mechanical penetrations for systems with a system-level aging management review are evaluated with that system. The scope of this evaluation is passive mechanical penetration components not included in other system evaluations. This evaluation includes only the containment penetration portion of these systems.

The grouping of containment isolation valves from various plant systems into one consolidated review is appropriate, as stated in NUREG-1800, *Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants*, Section 2.1.3.1.

Containment penetrations have the following intended function for 10CFR54.4(a)(1).

- Prevent release of radioactivity to outside environment.

Containment penetrations have no intended functions for 10CFR54.4(a)(2) ~~or (a)(3)~~.

Containment penetrations have the following intended function for 10CFR54.4(a)(3).

- Provide optional capability, located in the CCR, to bypass the existing manual containment isolation valves allowing the instrument air flow to reach the Fan House Safe Shut Down Panel in case of fire inside containment to support the Alternate Safe Shutdown System (ASSS).

Table 3.2.2-5-IP2
Containment Penetrations
Summary of Aging Management Review

Table 3.2.2-5-IP2: Containment Penetrations								
Component Type	**Intended Function**	**Material**	**Environment**	**Aging Effect Requiring Management**	**Aging Management Programs**	**NUREG-1801 Vol. 2 Item**	**Table 1 Item**	**Notes**
Tubing	Pressure boundary	Stainless steel	Air – treated (int)	None	None	--	--	G

Table 3.2.2-5-IP2: Containment Penetrations								
Component Type	**Intended Function**	**Material**	**Environment**	**Aging Effect Requiring Management**	**Aging Management Programs**	**NUREG-1801 Vol. 2 Item**	**Table 1 Item**	**Notes**
Valve body	Pressure boundary	Stainless steel	Air – treated (int)	None	None	--	--	G

2.3.3.4 Compressed Air

System Description

Unit 2

Instrument Air

The compressed air system includes the instrument air (IA) and station air (SA) subsystems.

The purpose of the IA system is to provide a continuous supply of dry, oil-free air for pneumatic instruments and controls. Instrument air is provided by duplicate compressors with duplicate dryers and filters. In addition, alternate supplies are provided from the Unit 2 station air system and Unit 1 station air system. A connection has been provided in the station air system to allow a backup supply of air from portable compressed air equipment. The instrument air system, although designed to meet air capacity requirements, utilizes the higher capacity Unit 1 station air compressors as a primary source of air supply. Because of the high capacity output capability of the Unit 1 air compressors, Unit 2 is able to utilize the Unit 1 air compressors for all Unit 1 and 2 station and instrument air requirements. Unit 2 station air compressor and both Unit 2 instrument air compressors serve as backups. The system includes the compressors, dryers, filters, receivers, distribution piping and valves, instruments and controls.

Those items essential for safe operation and safe cooldown are provided with air reserves or gas bottles. These supplies enable the equipment to function in a safe manner until the air supply is reestablished. The IA system includes piping, air bottles, valves and controls supporting this air reserve function, but does not include all of the air or gas bottles, which are part of other systems. The system may also be used to provide air to the post-accident venting system to pressurize containment in support of hydrogen control, but this is not a safety-related function.

The IA System provides the capability to isolate air to the speed controller for the charging pump (the 21 pump in the chemical and volume control system) from the central control room (CCR), enabling the pump to run at high speed. Adjustment of the charging pump to maximum speed is necessary to establish the required charging flow rate credited in the IP2 Appendix R basis thermal-hydraulic analysis.

The IA system has the following intended functions for 10 CFR 54.4(a)(3).

- Provide a backup source of compressed gas for pneumatically operated components for the Appendix R event (10 CFR 50.48).
- Enable charging pump 21 to be run at high speed without the need for operator actions outside the CCR in response to a fire for the Appendix R event (10 CFR 50.48).
- Support safe shutdown in the event of a fire in the auxiliary feed pump room (10 CFR 50.48) (see Section 2.3.4.5).

Table 3.3.2-19-8-IP2
Intake Structure System
Nonsafety-Related Components Potentially Affecting Safety Functions
Summary of Aging Management Review

Table 3.3.2-19-8-IP2: Intake Structure System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary	Copper alloy	Raw water (int)	Loss of material	Periodic Surveillance and Preventive Maintenance	VIII.A-4 (SP-31)	3.4.1-32	E
Valve body	Pressure boundary	Copper alloy	Air – indoor (ext)	None	None	V.F-3 (EP-10)	3.2.1-53	C

Table 3.3.2-2-IP3: Service Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes

Table 3.3.2-2-IP3: Service Water System								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Table 1 Item	Notes
Valve body	Pressure boundary Flow control	Gray cast iron	Condensation (ext)	Loss of material	External Surfaces Monitoring	VII.I-11 (A-81)	3.3.1-58	A
Valve body	Pressure boundary Flow control	Gray cast iron	Raw water (int)	Loss of material	Service Water Integrity	VII.C1-19 (A-38)	3.3.1-76	A
Valve body	Pressure boundary Flow control	Gray cast iron	Raw water (int)	Loss of material	Selective Leaching	VII.C1-11 (A-51)	3.3.1-85	A

APPENDIX A

A.0 INTRODUCTION

This appendix is divided into three sections. The first section identifies changes to the existing sections of each UFSAR related to license renewal. The next two sections provide new information to be incorporated into the Unit 2 UFSAR and Unit 3 UFSAR. The information presented in each section will be incorporated into the respective UFSAR following issuance of the renewed operating

licenses. ~~Upon~~With inclusion of the UFSAR Supplement in ~~each~~ the UFSAR, future changes to the descriptions of the programs and activities will be made in accordance with 10 CFR 50.59.

A.2.0 Supplement for Renewed Operating License

The Indian Point Energy Center license renewal application (Reference A.2-1) and information in subsequent related correspondence provided sufficient basis for the NRC to make the findings required by 10 CFR 54.29 (Final Safety Evaluation Report) (Reference A.2-2). As required by 10 CFR 54.21(d), this UFSAR supplement contains a summary description of the programs and activities for managing the effects of aging (Section A.2.1) and a description of the evaluation of time-limited aging analyses for the period of extended operation (Section A.2.2). The period of extended operation is the 20 years after the expiration date of the original operating license.

A.2.1.5 Buried Piping and Tanks Inspection Program

IP2 will perform 20 direct visual inspections of buried piping during the 10 year period prior to the PEO. IP2 will perform 14 direct visual inspections during each 10-year period of the PEO. Soil samples will be taken prior to the PEO and at least once every 10 years in the PEO. Soil will be tested at a minimum of two locations at least three feet below the surface near in-scope piping to determine representative soil conditions for each system. If test results indicate the soil is corrosive then the number of piping inspections will be increased to 20 during each 10-year period of the PEO.

A.2.1.11 Fatigue Monitoring Program

The Fatigue Monitoring Program is an existing program that tracks the number of critical thermal and pressure transients for selected reactor coolant system components. The program ensures the validity of analyses that explicitly analyzed a specified number of fatigue transients by assuring that the actual effective number of transients does not exceed the analyzed number of transients. The program provides for update of the fatigue usage calculations to maintain a cumulative use factor (CUF) of < 1.0 for the period of

extended operation. For the locations identified in Section A.2.2.2.43, updated calculations will account for the effects of the reactor water environment.

(Section A.2.2.2.3 revised to A.2.2.2.4)

A.2.1.16 Heat Exchanger Monitoring Program

The Heat Exchanger Monitoring Program is an existing plant-specific program that inspects heat exchangers for loss of material through visual or other non-destructive examination.

The Heat Exchanger Monitoring Program will be enhanced to include the following.

- Revise appropriate procedures to perform visual inspection on heat exchangers where non-destructive examination, such as eddy current inspection, is not possible due to heat exchanger design limitations.

A.2.1.17 Inservice Inspection – Inservice Inspection (ISI) Program

The ISI Program is an existing program based on ASME Section XI Inspection Program B (Section XI, IWA-2432), which has 10-year inspection intervals. Every 10 years the program is updated to the latest ASME Section XI code edition and addendum approved in 10 CFR 50.55a.

The program consists of periodic volumetric, surface, and visual examination of components and their supports for assessment of signs of degradation, flaw evaluation, and corrective actions.

A.2.1.19 Metal-Enclosed Bus Inspection Program

The Metal-Enclosed Bus Inspection Program is an existing program that performs inspections on the following non-segregated phase buses.

A.2.1.23 Non-EQ Instrumentation Circuits Test Review Program

The Non-EQ Instrumentation Circuits Test Review Program is a new program that assures the intended functions of sensitive, high-voltage, low-signal cables exposed to adverse localized equipment environments caused by heat, radiation and moisture~~;~~ (i.e., neutron flux monitoring instrumentation and high range radiation monitors)~~;~~ can be maintained consistent with the current licensing basis through the period of extended operation. Most sensitive instrumentation circuit cables and connections are included in the instrumentation loop calibration at the normal calibration frequency, which provides sufficient indication of the need for corrective actions based on acceptance criteria related to instrumentation loop performance. The review of calibration results will be performed once every ten years, with the first review occurring before the period of extended operation.

(Delete semicolon after moisture)

A.2.1.26 One-Time Inspection Program

The One-Time Inspection Program is a new program that includes measures to verify effectiveness of an aging management program (AMP) and confirm the absence of an aging effect. For structures and components that rely on an AMP, this program will verify effectiveness of the AMP by confirming that unacceptable degradation is not occurring and the intended function of a component will be maintained during the period of extended operation. One-time inspections may be needed to address concerns for potentially long incubation periods for certain aging effects on structures and components. There are cases where either (a) an aging effect is not expected to occur but there is insufficient data to completely rule it out, or (b) an aging effect is expected to progress very slowly. For these cases, there will be confirmation that either the aging effect is indeed not occurring, or the aging effect is occurring very slowly so as not to affect the component or structure intended function. A one-time inspection of the subject component or structure is appropriate for this verification. The inspections will be nondestructive examinations (including visual, ultrasonic, and surface techniques).One-time inspection activities on the following confirm that loss of material is not occurring or is so insignificant that an aging management program is not warranted.

One-time inspection activities on the following confirm that loss of material is not occurring or is so insignificant that an aging management program is not warranted.

- ~~i~~internal surfaces of stainless steel dryer housings, filter housings, piping, tubing, strainers and valve bodies in the ~~IPI~~ IP1 station air system exposed to condensation

- ~~i~~internal surfaces of instrument air system stainless steel tubing, valve bodies and aluminum valve bodies

(Change letter to lower case and change I to 1 in IPI)

A.2.1.28 Periodic Surveillance and Preventive Maintenance Program

Surveillance testing and periodic inspections using visual or other non-destructive examination techniques verify that the following components are capable of performing their intended function.

- circulating water system expansion joints~~,~~ and pump casings

(Delete comma)

A.2.1.41 Reactor Vessel Internals Aging Management Activities

The IPEC RVI Program will be implemented and maintained in accordance with the guidance in NEI 03-08 [Addenda], Addendum A, "RCS Materials Degradation Management Program Guidelines." Any deviations from mandatory, needed, or good practice implementation requirements established in MRP-227-A or MRP-228~~,~~ will be resolved in accordance with the NEI 03-08 implementation protocol. The RVI Program will be implemented prior to the period of extended operation.

(Comma deleted after MRP-228)

A.2.2.1.3 Charpy Upper-Shelf Energy

One intermediate shell plate (B2002-3) and one lower shell plate (B2003-1) have projected upper shelf energy levels that fall below 50 ft-lb during the period of extended operation. All remaining plate and weld beltline materials meet or exceed the requirement of ~~exceed~~ 50 ft-lb at 48 EFPY.

An equivalent margins analysis performed in WCAP-13587, Rev. 1, demonstrated that the minimum acceptable USE for reactor vessel plate material in four-loop plants is 43 ~~ft. lbs~~ft-lb. In the safety assessment of WCAP-13587, the NRC concluded the report demonstrated margins of safety equivalent to those of the ASME code for beltline plate and forging materials. The USE values are therefore acceptable since the lowest projected USE level for the beltline plate material through the period of extended operation of 48.3 ft-lb for intermediate shell plate B2002-3 is above the 43 ft-lb~~s~~ minimum acceptable USE for four-loop plants determined in WCAP-13587 Rev. 1.

A.2.2.2.1 Class 1 Metal Fatigue

Class 1 components evaluated for fatigue and flaw growth include the reactor pressure vessel (RPV), pressurizer, steam generators, reactor coolant pumps, control rod drive mechanisms, regenerative letdown heat exchanger, and Class 1 piping and in-line components.

(Hyphen between Class and 1 deleted)

A.2.2.6 Steam Generator Flow-Induced Vibration and Tube Wear

The steam generators were evaluated with respect to flow-induced vibration (tube wear). The replacement steam generators went into service in January 2000 and will have less than 40 years of service at the end of the period of extended operation (September 2033). Therefore, these TLAA will remain valid through the end of the period of extended operation in accordance with 10 CFR 54.21(c)(1)(i).

(Added comma)

APPENDIX B

B.1.20 METAL-ENCLOSED BUS INSPECTION

Program Description

The Metal-Enclosed Bus Inspection Program is an existing program that inspects the following non-segregated phase buses.

B.1.24 NON-EQ INSTRUMENTATION CIRCUITS TEST REVIEW

Program Description

The Non-EQ Instrumentation Circuits Test Review Program is a new program that assures the intended functions of sensitive, high-voltage, low-signal cables exposed to adverse localized equipment environments caused by heat, radiation and moisture; (i.e., neutron flux monitoring instrumentation and high range radiation monitors); can be maintained consistent with the current licensing basis through the period of extended operation. Most sensitive instrumentation circuit cables and connections are included in the instrumentation loop calibration at the normal calibration frequency, which provides sufficient indication of the need for corrective actions based on acceptance criteria related to instrumentation loop performance. The review of calibration results will be performed once every ten years, with the first review occurring before the period of extended operation.

(Deleted semicolons)

4.2.3 Pressure-Temperature Limits

Appendix G of 10 CFR 50 requires operation of the reactor pressure vessel within established pressure-temperature (P-T) limits. These limits are established by calculations that utilize the materials and fluence data obtained through the unit specific reactor

surveillance capsule program. Normally, the pressure-temperature limits are calculated for several years into the future and remain valid for an established period of time.

Unit 2

Technical Specifications contain pressure/temperature limits and LTOP requirements valid through ~~25~~ 48EFPY including the effects of the stretch power uprate. (See NL-13-001 and RA-14-34 for submittal and approval of pressure/temperature limits and LTOP requirements to cover a lifetime burnup of 48 EFPY.)

The P-T limit curves will continue to be updated, as required by Appendix G of 10 CFR Part 50 or as operational needs dictate. This updating will assure that the operational limits remain valid through the period of extended operation. ~~Additional P-T limit analysis is not required at this time.~~ Maintaining the P-T limit curves in accordance with Appendix G of 10 CFR 50 assures that the effects of aging on the intended function(s) will be adequately managed for the period of extended operation consistent with 10 CFR 54.21(c)(1)(iii).

A.2.2.1.2 Pressure-Temperature Limits

Appendix G of 10 CFR 50 requires operation of the reactor pressure vessel be accomplished within established pressure-temperature (P-T) limits. These limits are established by calculations that utilize the materials and fluence data obtained through the unit specific reactor surveillance capsule program.

Technical Specifications contain pressure/temperature limits and LTOP requirements valid through ~~25~~48 EFPY including the effects of power uprate.

The P-T limit curves will continue to be updated, as required by Appendix G of 10 CFR Part 50 or as operational needs dictate. (See NL-13-001 and RA-14-34 for submittal and approval of pressure/temperature limits and LTOP requirements to cover a lifetime burnup of 48 EFPY.)

~~IP2 will submit additional P-T curves as 10 CFR 50, Appendix G requires prior to the period of extended operation as part of the Reactor Vessel Surveillance Program. LTOP (PORV) setpoints will be re-evaluated when pressure/temperature curves are submitted.~~

2.3.3.19 Miscellaneous Systems in Scope for (a)(2)

As discussed in Sections 2.1.1.2 and 2.1.2.1.2, systems within the scope of license renewal based on the criterion of 10 CFR 54.4(a)(2) interact with safety-related systems in one of two ways: functional or physical. A functional failure is one where the failure of a nonsafety-related SSC to perform its function impacts a safety function. A physical failure is one where a safety function is impacted by the loss of structural or mechanical integrity of an SSC in physical proximity to equipment that supports the safety function.

Unit 2

The following Unit 2 systems are within the scope of license renewal based on the criterion of 10 CFR 54.4(a)(2) and are not described elsewhere in the application.

Miscellaneous

The miscellaneous (MSCL) system code includes a variety of structural, electrical and mechanical components with no collective purpose. Mechanical components within the system code include a water heater and filter/pump for the asbestos decon facility, and a small number of valves, primarily from sump ~~and sewage~~ flowpaths.