IPRenewal NPEmails

From: STROUD, MICHAEL D [MSTROUD@entergy.com]
Sent: Thursday, August 14, 2008 9:24 AM
To: Kimberly Green
Cc: YOUNG, GARRY G
Subject: FW: License Renewal Letter NL-08-127
Attachments: License Renewal letter NL-08-127 aug 14, 2008.pdf

Kim,

See attached IPEC letter for the Structural OE audit questions and Electrical RAIs and audit questions. This also covers the PTS revised rule change.

Thanks
Mike

From: Rokes, Charles B
Sent: Thursday, August 14, 2008 8:01 AM
To: STROUD, MICHAEL D
Cc: Curry, John J
Subject: License Renewal Letter NL-08-127

Attached is approved license renewal letter NL-08-127 dated August 14, 2008.

Hearing Identifier: IndianPointUnits2and3NonPublic_EX
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Subject: FW: License Renewal Letter NL-08-127
Sent Date: 8/14/2008 9:23:44 AM
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From: STROUD, MICHAEL D

Created By: MSTROUD@entergy.com

Recipients:
"YOUNG, GARRY G" <GYOUNG4@entergy.com>
Tracking Status: None
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Tracking Status: None

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Priority: Standard
Return Notification: No
Reply Requested: No
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Expiration Date:
Recipients Received:

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Fred R. Dacimo
Vice President
License Renewal

August 14, 2008
Indian Point Units 2 & 3
Docket Nos. 50-247 & 50-286
NL-08-127

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

SUBJECT: **Additional Information Regarding License Renewal Application – Structural OE Clarifications, Clarifications for Electrical RAIs and Audit Questions, License Renewal Application Amendment**

Dear Sir or Madam:

Entergy Nuclear Operations, Inc is providing, in Attachments I, 2, 3, and 4, additional information on structural OE clarifications, clarifications for electrical RAIs and audit questions, Indian Point Energy Center (IPEC) License Renewal Application (LRA) Amendment, and revision 5 of the IPEC commitment list, pertaining to the License Renewal Application for Indian Point 2 and Indian Point 3. The additional information provided in this transmittal provides clarifications and additional information to previously submitted information in response to staff and audit questions.

There are no new commitments identified in this submittal. If you have any questions or require additional information, please contact Mr. R. Walpole, Manager, Licensing at (914) 734-6710.

I declare under penalty of perjury that the foregoing is true and correct. Executed on 8/14/2008.

Sincerely,

Fred R. Dacimo
Vice President
License Renewal

Attachments:

1. Operating Experience-Structures
2. Clarifications for Electrical RAIs and Audit Questions
3. IPEC License Renewal Application Amendment
4. IPEC Commitment List Revision 5

cc: Mr. Bo M. Pham, NRC Environmental Project Manager
Ms. Kimberly Green, NRC Safety Project Manager
Mr. John P. Boska, NRC NRR Senior Project Manager
Mr. Samuel J. Collins, Regional Administrator, NRC Region I
Mr. Sherwin E. Turk, NRC Office of General Counsel, Special Counsel
IPEC NRC Senior Resident Inspectors Office
Mr. Paul D. Tonko, President, NYSERDA
Mr. Paul Eddy, New York State Dept. of Public Service

ATTACHMENT 1 TO NL-08-127

OPERATING EXPERIENCE - STRUCTURES

REGARDING

LICENSE RENEWAL APPLICATION

ENTERGY NUCLEAR OPERATIONS, INC
INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 and 3
DOCKETS 50-247 and 50-286

INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 AND 3
LICENSE RENEWAL APPLICATION
OPERATING EXPERIENCE - STRUCTURES

The following additional information is provided in response to the IPEC audit questions listed below.

Audit Question 27

IP2 Containment Steel Liner Behind Insulation

Entergy addressed inspection of the containment steel liners in Audit Question 27. In summary it explained that in1973, a feedwater line leak heated a portion of the IP2 containment liner causing localized deformation due to thermal expansion. The affected area was subsequently covered with thermal insulation. In response to Audit Question 27, Entergy indicated that it does not remove insulation to inspect the steel liner in this area, on the basis that the liner behind the insulation is considered inaccessible in accordance with ASME code Section XI-IWE. In order to provide assurance that liner degradation is not occurring in this area, Entergy will remove insulation and perform a one-time inspection of a representative sample area of the IP2 containment liner affected by the 1973 event prior to entering the period of extended operation.

In April of 2000, during the first IPEC inspection required under the Containment Inservice Inspection (CII - IWE) Program, minor surface rust was noted on the IP2 containment liner. The condition existed on the liner at the juncture with the containment concrete floor slab. The cause was exposure to moisture as result of a service water line leak in 1980. The April 2000 inspections found several areas where the moisture barrier between the containment liner and the concrete floor slab was missing or not properly bonded.

In order to determine the extent of the IP2 condition, ten (10) insulation panels were removed to provide access to facilitate augmented inspection. With the insulation removed, light rust was noted. Thickness measurements showed no significant wall loss. Three subsequent inspections and thickness measurements of the containment liner in the same locations, the latest near the beginning of 2006, indicate that the area has remained dry, the corrosion is inactive, and the liner plate thickness is greater than the required thickness. As a result, the IP2 liner remains capable of performing its intended design function.

As shown in LRA Table 3.5.2-1, the moisture barrier at the juncture between the containment liner and the containment floor will continue to be inspected on both IP2 and IP3 in accordance with the requirements of ASME code section XI-IWE throughout the period of extended operation. The containment liner will continue to be inspected in accordance with the requirements of ASME code section XI-IWE, and tested in accordance with the requirements of 10CFR50, appendix J (Containment Leak Rate Test) to ensure the containment liner maintains its intended function during the period of extended operation.

However, in order to provide further assurance that liner degradation is not occurring in the same area on IP3, Entergy will perform a one-time inspection of sample locations of the IP3 containment liner at the juncture with the concrete floor slab, prior to entering the period of extended operation.

Audit Question 358

Water Control Structures

Entergy addressed degradation of water control structures in response to Audit Question 358. Specifically, Entergy explained that conditions of surface degradation of concrete in the water control structure had been identified during the first inspection under the IPEC Structures Monitoring Program in 1996. The evaluation performed under the corrective action program using ACI 201 acceptance criteria, determined that the identified surface degradation did not represent a structural concern that would prevent the water control structure from performing its intended function. Since then, re-inspection of the water control structure every five (5) years as part of the Structures Monitoring Program has confirmed that, despite the identified degradation, the water control structure remains capable of performing its license renewal intended function.

As indicated in LRA Table 3.5.2-2, under the Structures Monitoring Program Entergy will continue to monitor the structure in accordance with the requirements of 10CFR50.65 to ensure the structure maintains its intended function during the period of extended operation (PEO). While the existing Structures Monitoring Program has demonstrated its effectiveness in assuring the water control structure remains capable of performing its intended function, the inspection of these degraded areas during the period of extended operation will be performed once per 3 years rather than the normal frequency of once per 5 years. This increased inspection frequency provides additional assurance that the effects of aging will be managed such that the water control structure maintains its ability to perform its intended function during the period of extended operation.

Audit Question 359

IP2 Reactor Cavity

Entergy addressed plant-specific degradation of the IP2 reactor refueling cavity in response to Audit Question 359. Entergy has observed leakage of the IP2 refueling cavity liner when flooded during refueling outages when the reactor is shut down (i.e., an average of less than 2 weeks each refueling cycle). This leakage is wholly contained within the containment. Personnel have thoroughly evaluated the condition.

Evaluation of the condition considered immediate impacts of the leakage, as well as long term effects on potentially impacted structures within containment including the refueling cavity structure. Immediate impacts on refueling operations are small as the leakage is readily replaced with periodic makeup from the refueling water storage tank. The leakage is entirely contained within and is collected in the lower elevation of the containment building from where it is pumped to the radioactive liquid waste processing system. As such, the leakage does not impact structures other than the refueling cavity. The impact of the leakage on the refueling cavity structure is discussed in the following paragraphs.

Several studies have been performed to address the impacts of chemical attack on reinforced concrete. In 1966, Kuenning in a paper titled "Resistance of Portland Cement Mixtures and Chemical Attacks," reported that liquids with a pH of 5.3 and above will not cause a chemical attack on concrete. Kuenning also showed that borates will not adversely affect concrete. Considering that the pH of the refueling cavity fluid is approximately 4.7, the chemical attack on concrete is minimal. Florida Power and Light (FP&L) reported in Test Report P522-1471, "Test Report Long Term Evaluation of Concrete Reinforcement Steel," that there are negligible effects on concrete from borated water with boron concentrations of around 2300 ppm when tested for a period of approximately eight years.

The impact of refueling cavity liner leakage also has been the subject of other evaluations at IP2. Results of core bore samples taken in 1993 and reported in Technical Report No. 8327, "Evaluation of Reactor Refueling Cavity Wall – Indian Point 2 Nuclear Power Plant," indicate a depth of penetration of borated water into the concrete of ½" or less. As concrete cover over reinforcing steel is in the 1.5" to 2" range, borated water penetration into the concrete is less than that required to expose the reinforcing steel to its effects, except at localized discontinuities such as, shrinkage cracks and construction joints that allow a path into the concrete.

In addition, in 1993, a report titled "Technical Report 8281 – Evaluation of Spent Fuel Pool Walls Indian Point 2 Nuclear Power Plant" discussed the evaluation of core samples from the east wall of the spent fuel pool storage pit taken to assess the effect of a 2 year leak on the concrete and reinforcing steel. The report documented concrete testing that showed the concrete had compressive strengths equal to or exceeding the design requirements. The conclusion of the report was that the borated water had minimal effect on the concrete and reinforcing steel. Since the concrete used to construct the spent fuel pit walls met the same specification as the concrete used in the refueling cavity walls, this result applies to the refueling cavity walls.

The refueling cavity is a robust structure, with minimum wall thickness in the 4' range. The stress levels in the concrete and reinforcement are low compared against capacities. Considering that the borated water leakage is limited to the short duration when the cavity is filled during refueling outages, the overall exposure of the concrete to borated water is significantly shorter than that in the tests and studies discussed above, i.e., weeks versus years.

Based on the tests and evaluations, as well as the industry and IPEC experience discussed above, ongoing monitoring under the Structures Monitoring Program will manage the effects of aging such that the refueling cavity reinforced concrete structure remains capable of performing its intended function throughout the period of extended operation. There is no uncertainty about the ability of the ongoing structures monitoring program to ensure that potentially affected structures remain capable of performing license renewal intended functions throughout the period of extended operation. The Structures Monitoring Program credited for managing the effects of aging on the refueling cavity structure will provide reasonable assurance that the intended function will be maintained even if this condition is not corrected prior to entering the period of extended operation.

Notwithstanding the above, Entergy plans further efforts to preclude future leakage and eliminate the associated housekeeping concerns associated with fluid leakage in containment. Because there is no structural concern due to the leakage, the repair efforts will be prioritized along with other initiatives according to importance to overall plant safety and availability of necessary site resources.

However, to provide additional assurance that the underlying concrete remains capable of performing its license renewal intended function throughout the period of extended operation, Entergy will perform a one-time inspection and evaluation of a sample of potentially affected refueling cavity concrete prior to the period of extended operation. The sample will be obtained by core boring the refueling cavity wall in an area that is susceptible to exposure to the borated water leakage. The inspection will include an assessment of embedded reinforcing steel.

Audit Question 360

IP2 Spent Fuel Pool

Entergy addressed plant-specific degradation of the IP2 spent fuel pool in response to Audit Question 360. As indicated in the LRA, the Water Chemistry Control – Primary and Secondary Program, in conjunction with monitoring spent fuel pool water level in accordance with technical specifications, has managed and will continue to manage the effects of aging on the spent fuel pool liner ensuring the ability of the structure to fulfill its license renewal intended functions throughout the period of extended operation. Entergy has corrected all known sources of leakage from the spent fuel pool.

Furthermore, a one-time inspection of the accessible areas of the IP2 spent fuel pool was conducted beginning in 2006 providing additional assurance of the continued ability of the IP2 spent fuel pool to fulfill its license renewal intended function throughout the period of extended operation. Approximately 40% of the liner was accessible for the inspection. Inspection techniques included use of robotic cameras, general visual and vacuum box testing. Vacuum box testing was used on areas of the liner that were suspect based on the general visual and robotic camera inspections. None of the suspect areas in the spent fuel pool area failed the vacuum box test, indicating that none of the indications found were actually leaking. Identified indications were coated as a precautionary measure.

Essentially 100% of the spent fuel pool transfer canal liner was inspected using the same techniques as used in the spent fuel pool with the addition of UT where applicable. The inspections discovered several indications and one weld defect in the transfer canal liner. The weld defect failed the vacuum box test. The defect and the indications were repaired.

Evaluation concluded that the defect and indications were the result of poor construction practices and workmanship during initial construction activities. The combined inspections of the spent fuel pool and the spent fuel pool transfer canal completed in 2007 constitute an effective one-time inspection of the IP2 spent fuel pool liner.

The commitment for program enhancements listed under "Scope of Program" for the Structures Monitoring Program, pages B-121 through B-124 of the LRA, includes those areas and structures that are not explicitly listed in the Structures Monitoring Program procedure. The spent fuel pool (pit) structure is explicitly listed in the Structures Monitoring Program procedure and is being inspected. As discussed in LRA Section 2.4.3, "Fuel Storage Building IP2/3", and as shown in Table 2.4-3 and 3.5.2-3, "Floor slabs, interior walls, and ceilings", spent fuel pool (pit) is in the scope of license renewal and subject to aging management review. The Structures Monitoring Program will continue to require inspections on the IP2 spent fuel pool through the period of extended operation.

Groundwater monitoring for IP2 and IP3 includes sampling from wells adjacent to the IP2 spent fuel pool. Samples are checked for sulfates, pH and chlorides and tritium. Entergy has committed to long term monitoring of site groundwater with the objective of assuring proper assessment and reporting of dose impact, identification of potential leaks to ground water, and the ongoing assessment of the long term monitored attenuation strategy (Ref. Letter dated May 15, 2008, titled "Remediation and Long Term Monitoring of Site Groundwater", from Mr. Joseph E. Pollock to USNRC- Document Control Desk".) The presence of tritium is a better indication of a leak from a spent fuel pool than the presence of boron. Tritium is a better indicator than boron because boron can be absorbed or partitioned into geologic materials. In addition, tritium is contained in the IP2 spent fuel pool in high concentrations relative to its detection limit (ratio of concentration to detection limit is greater for tritium than for boron).

The enhancement to the Structures Monitoring Program, "Detection of Aging Effects", shown in LRA Section B.1.36, page B-124, is revised to include tritium in the monitoring and evaluation of ground water samples. The revised program enhancement reads as follows.

> Guidance to perform evaluation of groundwater samples will be added to the Structures Monitoring Program. To assess aggressiveness of groundwater to concrete, IPEC will obtain samples from 5 wells that are representative of the ground water surrounding below-grade site structures at least once every five years and perform an engineering evaluation of the results from those samples for sulfates, pH and chlorides. Additionally, to assess potential indications of spent fuel pool leakage, IPEC will sample for tritium in groundwater wells in close proximity to the IP2 spent fuel pool at least once every 3 months.

Audit Question 361

IP2 Containment Concrete

Entergy addressed plant-specific degradation of the IP2 containment structure in response to Audit Question 361. The containment concrete structure is routinely inspected (general visual examination) and evaluated in accordance with the requirements of the Containment Inservice Inspection (CII - IWL) Program (Ref. LRA Table 3.5.2-1, line item: "Dome, cylinder wall, basemat"). CII - IWL Program meets the ASME Code, Section XI, Subsection IWL as 10 CFR 50.55a requires.

Concrete spalls on the containment were noted during the 2000 containment inservice inspection. In these areas, the exposed reinforcing steel is oxidized, forming a protective coating. These areas have been evaluated under the corrective action program. The evaluations have determined that the spalls occur at locations where cadweld sleeves have insufficient concrete cover. Cadweld splices have diameters larger than the bar and thus have the least amount of concrete cover. The spalled concrete locations are on the vertical cylinder wall of the containment precluding the possibility of standing water that could percolate through the concrete. The location on the vertical wall of containment precludes ready access to allow for repair of a condition determined to have no impact on the ability of the structure to perform its required function.

The 2005 CII-IWL inspection found little or no change of the condition observed in 2000. The identified areas show no signs of corrosion staining or deterioration and no indication that the degradation is progressing.

During the LRA review, Entergy committed to enhance the CII-IWL inspections during the period of extended operation through enhanced characterizing of the degradation (i.e., quantifying the dimensions of noted indications through the use of optical aids) (Ref. audit question 533). This better quantification will allow for more effective trending of degradation following future inspections. The enhancement includes obtaining critical dimensional data of degradation where possible through direct measurement or the use of scaling technologies for photographs, and the use of consistent vantage points for visual inspections. Implementation of this enhancement requires the continued use of optical aids to allow effective characterization of indications on the containment wall that are not accessible from the ground or from existing structures.

While Entergy has observed no progression of the containment concrete spall and rebar corrosion conditions during the most recent periodic inspections, the enhanced measures for characterizing degradation during the period of extended operation provide an effective means to detect potential future progression of the degradation such that corrective action to remedy the condition can be taken prior to loss of the license renewal intended function.

ATTACHMENT 2 TO NL-08-127

CLARIFICATIONS for ELECTRICAL RAIs and AUDIT QUESTIONS

REGARDING

LICENSE RENEWAL APPLICATION

ENTERGY NUCLEAR OPERATIONS, INC
INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 and 3
DOCKETS 50-247 and 50-286

INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 AND 3
LICENSE RENEWAL APPLICATION
CLARIFICATIONS FOR ELECTRICAL RAIs AND AUDIT QUESTIONS

RAI 3.6.2.3-2
IP2 138KV Switchyard Cable

In RAI 3.6.2.3-2 the staff asked Entergy to explain why an AMP is not required to manage the potential loss of dielectric strength leading to reduced insulation resistance and electrical failure of the IP2 138 kV underground transmission cable. As stated in the RAI response letter dated 6/26/2008, there are no aging effects requiring management because the IP2 138 kV underground transmission cable is not susceptible to aging mechanisms from moisture intrusion and water treeing, elevated operating temperature, voltage stress, or galvanic corrosion. Nevertheless, routine maintenance is credited for verifying the absence of aging effects on the Indian Point Unit 2, 138 kV underground transmission cable.

RAI 3.6.2.3-2 Clarification

LRA Section A.2.1.28 and B.1.29 will be modified to add the 138 kV underground transmission cable, which is part of the Unit 2 offsite power path, to the Periodic Surveillance and Preventive Maintenance Program. The routine maintenance will use vendor recommended testing and inspections as stated in the amended text for LRA Sections A.2.2.28 and B.1.29.

A.2.1.28 PERIODIC SURVEILLANCE AND PREVENTIVE MAINTENANCE PROGRAM, UFSAR Supplement, will be changed to add the 138 kV underground transmission cable. The section for surveillance testing and periodic inspections will be modified to add:

- U2 offsite power feeder, 138 kV underground transmission cable

B.1.29 PERIODIC SURVEILLANCE AND PREVENTIVE MAINTENANCE PROGRAM, Program Description, will be changed to add the 138 kV underground transmission cable as follows:

U2 offsite power feeder 138 kV underground transmission cable	On-Line: Visual inspection of external surfaces of termination and grounding connections, temperature measurement of above ground parts to detect potential overheating, and partial discharge testing.

LRA Section B.1.22, NON-EQ BOLTED CABLE CONNECTIONS, Clarification
Visual Inspections for a One- Time Inspections Program

Amendment 3 to the LRA, in Entergy letter dated 3/24/2008, provided the following clarification for questions asked during the NRC audits and inspections.

Items 63 and 563 (from Attachment 2 of Entergy letter dated 3/24/2008)

Item 63 is being revised to reflect discussion with the NRC Staff associated with draft LR-ISG-2007-02. LRA B.1.22 addresses the plant specific AMP for non-EQ bolted cable connections. Based on discussion with the NRC Staff, the AMP discussion for using visual inspection is being clarified to further explain the types of connections and personnel safety issues of opening energized equipment.

An example of where visual inspection is acceptable is motor connections where the motor lead is connected to the field cable in a local junction box. Because of personnel safety practices the junction box cover would not be removed when the cable is energized, so thermography could only be performed with the junction box cover in place, which may not provide accurate results. Another example of using visual inspection would be in remote switchgear panels where the entire connection to the bus is covered with tape or an insulating boot. For both of these examples, contact resistance measurements would require the destructive examination of the connection. The Entergy policies for personnel safety for energized components at a potential greater than 600V, are to observe a restricted approach boundary, which would preclude the removal of a bolted cover from energized components at a potential of greater than 600V. The number of bolted connections that are greater than 600V are limited to large motor, transformer, or generator connections (less than 30 connections, which is 3 connections per phase for 10 motors) for both units, and 5 remote MCC for both units.

LRA Section B.1.22 was previously revised with Amendment 1, Entergy Letter NL-07-153 dated 12/18/2007, and is not being changed by this clarification.

Items 63 and 563 Additional Clarification

Following a telephone conference call held on June 2, 2008 with the NRC, Entergy agreed that visual inspection would not be used for one-time inspections in the Indian Point Non-EQ Bolted Cable Connections Program. Based on this information, LRA Section B.1.22 is hereby revised.

B.1.22 NON-EQ BOLTED CABLE CONNECTIONS PROGRAM, Detection of Aging Effects, is revised as follows. This change supersedes the Amendment 1 revision in Entergy letter dated 12/18/07.

A representative sample of electrical connections within the scope of license renewal, and subject to aging management review will be inspected or tested prior to the period of extended operation to verify there are no aging effects requiring management during the period of extended operation.

The factors considered for sample selection will be application (medium and low voltage), circuit loading (high loading), and location (high temperature, high humidity, vibration, etc.). The technical basis for the sample selected will be documented. Inspection methods may include thermography, contact resistance testing, or other appropriate methods ~~including visual~~ based on plant configuration and industry guidance. The one-time inspection provides additional confirmation to support industry operating experience that shows that electrical connections have not experienced a high degree of failures, and that existing installation and maintenance practices are effective.

Further Clarification for RAI 2.5-1
Offsite Power Components in Scope of License Renewal

As stated in clarification to RAI 2.5-1 in the Entergy letter dated 3/21/2008, the offsite power paths, as shown in the figure attached to the response included the substation circuit breakers. The offsite power substation breakers shown in the revised figures in Entergy letter dated 3/21/2008 include the support structures and control circuits for these substation breakers.

As stated in LRA Section 2.4.3, Transformer/Switchyard Support Structures, "These support structures include the transformer foundations and support steel, transformer pothead foundations and support steel, and foundations for the associated switchyard breakers." The support structures associated with the components shown in the revised LRA figures provided in letter 3/21/2008 for the offsite power path are included in the scope of license renewal as indicated in LRA Section 2.4.3.

LRA Section 2.5 states, "Specifically, the offsite power recovery path includes the station auxiliary transformers, the 138KV switchyard circuit breakers supplying the station auxiliary transformers, the circuit breaker-to-transformer and transformer-to-onsite electrical distribution interconnections, and the associated control circuits and structures." The control circuits associated with the components shown in the revised LRA figures provided in letter 3/21/2008 for the offsite power path are included in the scope of license renewal as indicated in LRA Section 2.5.

ATTACHMENT 3 TO NL-08-127

IPEC LICENSE RENEWAL APPLICATION AMENDMENT

REGARDING

LICENSE RENEWAL APPLICATION

ENTERGY NUCLEAR OPERATIONS, INC
INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 and 3
DOCKETS 50-247 and 50-286

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

The LRA is revised as described below. (underline – added, strikethrough – deleted)

LRA Section 4.2.5, Pressurized Thermal Shock, is revised as follows.

4.2.5 Pressurized Thermal Shock

Unit 3

The projected 48 EFPY peak beltline fluence level at the clad/base metal interface of 1.560E+19 n/cm^2 was applied to all beltline materials. The resulting projected 48 EFPY RT_{PTS} are shown in Table 4.2-4. All projected RT_{PTS} values are within the established screening criteria for 48 EFPY with the exception of plate B2803-3, which exceeds the screening criterion by 9.9 F. Values of RT_{NDT} for the IP3 beltline materials at ¼ T and ¾ T are summarized in Table 4.2-6.

As required by 10 CFR 50.61(b)(4), a plant-specific safety analysis for plate B2803-3 will be submitted to the NRC three years prior to reaching the RT_{PTS} screening criterion. Alternatively, IP3 may choose to implement the revised PTS ~~(10 CFR 50.61)~~rule ~~if~~when approved~~, which would permit use of Regulatory Guide 1.99, Revision 3. Application of Regulatory Guide 1.99, Revision 3 to plate B2803-3 is expected to result in an acceptable through-wall crack frequency at 48 EFPY.~~

Therefore, the RT_{PTS} TLAA will be adequately managed for the period of extended operation in accordance with 10CFR54.21(c)(1)(iii).

LRA Appendix A, Section A.3.2.1.4, Pressurized Thermal Shock, is revised as follows.

A.3.2.1.4 Pressurized Thermal Shock

10 CFR 50.61(b)(1) provides rules for protection against pressurized thermal shock events for pressurized water reactors. Licensees are required to perform an assessment of the projected values of reference temperature whenever a significant change occurs in projected values of the adjusted reference temperature for pressurized thermal shock (RT_{PTS}). The screening criteria for RT_{PTS} is 270°F for plates, forgings, and axial welds and 300°F for circumferential welds.

Adjusted reference temperatures are calculated for both Positions 1 and 2 by following the guidance in Regulatory Guide 1.99, Sections 1.1 and 2.1, respectively, using copper and nickel content of beltline materials and end-of-life (EOL) best estimate fluence projections.

All projected RT_{PTS} values are within the established screening criteria for 48 EFPY with the exception of plate B2803-3, which exceeds the screening criterion by 9.9°F.

As required by 10 CFR 50.61(b)(4), a plant-specific safety analysis for plate B2803-3 will be submitted to the NRC three years prior to reaching the RT_{PTS} screening criterion.

Alternatively, the site may choose to implement the revised PTS ~~(10 CFR 50.61)~~ rule when approved~~,. which would permit use of Regulatory Guide 1.99, Revision 3. Application of Regulatory Guide 1.99, Revision 3, to plate B2803-3 is expected to result in an acceptably low probability of a through-wall crack at 48 EFPY.~~

B.1.36 Structures Monitoring

LRA Appendix B, Section B.1.36, Structures Monitoring, is revised as follows.

Attributes Affected	Enhancements
4. Detection of Aging Effects	Guidance to perform ~~an engineering~~ evaluation of groundwater samples ~~to assess aggressiveness of groundwater to concrete on a periodic basis (at least once every five years)~~ will be added to the Structures Monitoring Program. To assess aggressiveness of groundwater to concrete, IPEC will obtain samples from at least 5 wells that are representative of the ground water surrounding below-grade site structures at least once every five years and perform an engineering evaluation of the results from those. ~~S~~samples ~~will be monitored~~ for sulfates, pH and chlorides. Additionally, to assess potential indications of spent fuel pool leakage, IPEC will sample for tritium in groundwater wells in close proximity to the IP2 spent fuel pool at least once every 3 months.

A.2.1.35 Structures Monitoring Program

LRA Appendix A, Section A.2.1.35, Structures Monitoring Program, is revised as follows.

- Guidance to perform an ~~engineering~~ evaluation of groundwater samples to assess aggressiveness of groundwater to concrete on a periodic basis (at least once every five years) will be added to the Structures Monitoring Program. The site will obtain samples from ~~a~~ 5 wells that ~~is~~ are representative of the groundwater surrounding below-grade site structures. and perform evaluation of the results from those samples ~~will be monitored~~ for sulfates, pH and chlorides. Additionally, to assess potential indications of spent fuel pool leakage, IPEC will sample for tritium in groundwater wells in close proximity to the IP2 spent fuel pool at least once every 3 months.

ATTACHMENT 4 TO NL-08-127

IPEC COMMITMENT LIST REVISION 5

REGARDING

LICENSE RENEWAL APPLICATION

ENTERGY NUCLEAR OPERATIONS, INC
INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 and 3
DOCKETS 50-247 and 50-286

List of Regulatory Commitments

Rev. 5

The following table identifies those actions committed to by Entergy in this document.

Changes are shown as strikethroughs for ~~deletions~~ and underlines for additions.

#	COMMITMENT	IMPLEMENTATION SCHEDULE	SOURCE	RELATED LRA SECTION / AUDIT ITEM
1	Enhance the Aboveground Steel Tanks Program for IP2 and IP3 to perform thickness measurements of the bottom surfaces of the condensate storage tanks, city water tank, and fire water tanks once during the first ten years of the period of extended operation. Enhance the Aboveground Steel Tanks Program for IP2 and IP3 to require trending of thickness measurements when material loss is detected.	IP2: September 28, 2013 IP3: December 12, 2015	NL-07-039	A.2.1.1 A.3.1.1 B.1.1
2	Enhance the Bolting Integrity Program for IP2 and IP3 to clarify that actual yield strength is used in selecting materials for low susceptibility to SCC and clarify the prohibition on use of lubricants containing MoS_2 for bolting. The Bolting Integrity Program manages loss of preload and loss of material for all external bolting.	IP2: September 28, 2013 IP3: December 12, 2015	NL-07-039 NL-07-153	A.2.1.2 A.3.1.2 B.1.2 Audit Items 201, 241, 270
3	Implement the Buried Piping and Tanks Inspection Program for IP2 and IP3 as described in LRA Section B.1.6. This new program will be implemented consistent with the corresponding program described in NUREG-1801 Section XI.M34, Buried Piping and Tanks Inspection.	IP2: September 28, 2013 IP3: December 12, 2015	NL-07-039 NL-07-153	A.2.1.5 A.3.1.5 B.1.6 Audit Item 173

#	COMMITMENT	IMPLEMENTATION SCHEDULE	SOURCE	RELATED LRA SECTION / AUDIT ITEM
4	Enhance the Diesel Fuel Monitoring Program to include cleaning and inspection of the IP2 GT-1 gas turbine fuel oil storage tanks, IP2 and IP3 EDG fuel oil day tanks, IP2 SBO/Appendix R diesel generator fuel oil day tank, and IP3 Appendix R fuel oil storage tank and day tank once every ten years. Enhance the Diesel Fuel Monitoring Program to include quarterly sampling and analysis of the IP2 SBO/Appendix R diesel generator fuel oil day tank, IP2 security diesel fuel oil storage tank, IP2 security diesel fuel oil day tank, and IP3 Appendix R fuel oil storage tank. Particulates, water and sediment checks will be performed on the samples. Filterable solids acceptance criterion will be less than or equal to 10mg/l. Water and sediment acceptance criterion will be less than or equal to 0.05%. Enhance the Diesel Fuel Monitoring Program to include thickness measurement of the bottom of the following tanks once every ten years. IP2: EDG fuel oil storage tanks, EDG fuel oil day tanks, SBO/Appendix R diesel generator fuel oil day tank, GT-1 gas turbine fuel oil storage tanks, and diesel fire pump fuel oil storage tank; IP3: EDG fuel oil day tanks, EDG fuel oil storage tanks, Appendix R fuel oil storage tank, and diesel fire pump fuel oil storage tank. Enhance the Diesel Fuel Monitoring Program to change the analysis for water and particulates to a quarterly frequency for the following tanks. IP2: GT-1 gas turbine fuel oil storage tanks and diesel fire pump fuel oil storage tank; IP3: Appendix R fuel oil day tank and diesel fire pump fuel oil storage tank. Enhance the Diesel Fuel Monitoring Program to specify acceptance criteria for thickness measurements of the fuel oil storage tanks within the scope of the program. Enhance the Diesel Fuel Monitoring Program to direct samples be taken and include direction to remove water when detected. Revise applicable procedures to direct sampling of the onsite portable fuel oil contents prior to transferring the contents to the storage tanks. Enhance the Diesel Fuel Monitoring Program to direct the addition of chemicals including biocide when the presence of biological activity is confirmed.	IP2: September 28, 2013 IP3: December 12, 2015	NL-07-039 NL-07-153 NL-08-057	A.2.1.8 A.3.1.8 B.1.9 Audit items 128, 129, 132, 491, 492, 510

#	COMMITMENT	IMPLEMENTATION SCHEDULE	SOURCE	RELATED LRA SECTION / AUDIT ITEM
5	Enhance the External Surfaces Monitoring Program for IP2 and IP3 to include periodic inspections of systems in scope and subject to aging management review for license renewal in accordance with 10 CFR 54.4(a)(1) and (a)(3). Inspections shall include areas surrounding the subject systems to identify hazards to those systems. Inspections of nearby systems that could impact the subject systems will include SSCs that are in scope and subject to aging management review for license renewal in accordance with 10 CFR 54.4(a)(2).	IP2: September 28, 2013 IP3: December 12, 2015	NL-07-039	A.2.1.10 A.3.1.10 B.1.11
6	Enhance the Fatigue Monitoring Program for IP2 to monitor steady state cycles and feedwater cycles or perform an evaluation to determine monitoring is not required. Review the number of allowed events and resolve discrepancies between reference documents and monitoring procedures. Enhance the Fatigue Monitoring Program for IP3 to include all the transients identified. Assure all fatigue analysis transients are included with the lowest limiting numbers. Update the number of design transients accumulated to date.	IP2: September 28, 2013 IP3: December 12, 2015	NL-07-039 NL-07-153	A.2.1.11 A.3.1.11 B.1.12, Audit Item 164
7	Enhance the Fire Protection Program to inspect external surfaces of the IP3 RCP oil collection systems for loss of material each refueling cycle. Enhance the Fire Protection Program to explicitly state that the IP2 and IP3 diesel fire pump engine sub-systems (including the fuel supply line) shall be observed while the pump is running. Acceptance criteria will be revised to verify that the diesel engine does not exhibit signs of degradation while running; such as fuel oil, lube oil, coolant, or exhaust gas leakage. Enhance the Fire Protection Program to specify that the IP2 and IP3 diesel fire pump engine carbon steel exhaust components are inspected for evidence of corrosion and cracking at least once each operating cycle. Enhance the Fire Protection Program for IP3 to visually inspect the cable spreading room, 480V switchgear room, and EDG room CO_2 fire suppression system for signs of degradation, such as corrosion and mechanical damage at least once every six months.	IP2: September 28, 2013 IP3: December 12, 2015	NL-07-039	A.2.1.12 A.3.1.12 B.1.13

#	COMMITMENT	IMPLEMENTATION SCHEDULE	SOURCE	RELATED LRA SECTION / AUDIT ITEM
8	Enhance the Fire Water Program to include inspection of IP2 and IP3 hose reels for evidence of corrosion. Acceptance criteria will be revised to verify no unacceptable signs of degradation. Enhance the Fire Water Program to replace all or test a sample of IP2 and IP3 sprinkler heads required for 10 CFR 50.48 using guidance of NFPA 25 (2002 edition), Section 5.3.1.1.1 before the end of the 50-year sprinkler head service life and at 10-year intervals thereafter during the extended period of operation to ensure that signs of degradation, such as corrosion, are detected in a timely manner. Enhance the Fire Water Program to perform wall thickness evaluations of IP2 and IP3 fire protection piping on system components using non-intrusive techniques (e.g., volumetric testing) to identify evidence of loss of material due to corrosion. These inspections will be performed before the end of the current operating term and at intervals thereafter during the period of extended operation. Results of the initial evaluations will be used to determine the appropriate inspection interval to ensure aging effects are identified prior to loss of intended function. Enhance the Fire Water Program to inspect the internal surface of foam based fire suppression tanks. Acceptance criteria will be enhanced to verify no significant corrosion.	IP2: September 28, 2013 IP3: December 12, 2015	NL-07-039 NL-07-153 NL-08-014	A.2.1.13 A.3.1.13 B.1.14 Audit Items 105, 106
9	Enhance the Flux Thimble Tube Inspection Program for IP2 and IP3 to implement comparisons to wear rates identified in WCAP-12866. Include provisions to compare data to the previous performances and perform evaluations regarding change to test frequency and scope. Enhance the Flux Thimble Tube Inspection Program for IP2 and IP3 to specify the acceptance criteria as outlined in WCAP-12866 or other plant-specific values based on evaluation of previous test results. Enhance the Flux Thimble Tube Inspection Program for IP2 and IP3 to direct evaluation and performance of corrective actions based on tubes that exceed or are projected to exceed the acceptance criteria. Also stipulate that flux thimble tubes that cannot be inspected over the tube length and cannot be shown by analysis to be satisfactory for continued service, must be removed from service to ensure the integrity of the reactor coolant system pressure boundary.	IP2: September 28, 2013 IP3: December 12, 2015	NL-07-039	A.2.1.15 A.3.1.15 B.1.16

#	COMMITMENT	IMPLEMENTATION SCHEDULE	SOURCE	RELATED LRA SECTION / AUDIT ITEM
10	Enhance the Heat Exchanger Monitoring Program for IP2 and IP3 to include the following heat exchangers in the scope of the program. • Safety injection pump lube oil heat exchangers • RHR heat exchangers • RHR pump seal coolers • Non-regenerative heat exchangers • Charging pump seal water heat exchangers • Charging pump fluid drive coolers • Charging pump crankcase oil coolers • Spent fuel pit heat exchangers • Secondary system steam generator sample coolers • Waste gas compressor heat exchangers • SBO/Appendix R diesel jacket water heat exchanger (IP2 only) Enhance the Heat Exchanger Monitoring Program for IP2 and IP3 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. Enhance the Heat Exchanger Monitoring Program for IP2 and IP3 to include consideration of material-environment combinations when determining sample population of heat exchangers. Enhance the Heat Exchanger Monitoring Program for IP2 and IP3 to establish minimum tube wall thickness for the new heat exchangers identified in the scope of the program. Establish acceptance criteria for heat exchangers visually inspected to include no unacceptable signs of degradation.	IP2: September 28, 2013 IP3: December 12, 2015	NL-07-039 NL-07-153	A.2.1.16 A.3.1.16 B.1.17, Audit Item 52
11	Enhance the ISI Program for IP2 and IP3 to provide periodic visual inspections to confirm the absence of aging effects for lubrite sliding supports used in the steam generator and reactor coolant pump support systems.	IP2: September 28, 2013 IP3: December 12, 2015	NL-07-039 NL-07-153	A.2.1.17 A.3.1.17 B.1.18 Audit item 59

#	COMMITMENT	IMPLEMENTATION SCHEDULE	SOURCE	RELATED LRA SECTION / AUDIT ITEM
12	Enhance the Masonry Wall Program for IP2 and IP3 to specify that the IP1 intake structure is included in the program.	IP2: September 28, 2013 IP3: December 12, 2015	NL-07-039	A.2.1.18 A.3.1.18 B.1.19
13	Enhance the Metal-Enclosed Bus Inspection Program to add IP2 480V bus associated with substation A to the scope of bus inspected. Enhance the Metal-Enclosed Bus Inspection Program for IP2 and IP3 to visually inspect the external surface of MEB enclosure assemblies for loss of material at least once every 10 years. The first inspection will occur prior to the period of extended operation and the acceptance criterion will be no significant loss of material. Enhance the Metal-Enclosed Bus Inspection Program to add acceptance criteria for MEB internal visual inspections to include the absence of indications of dust accumulation on the bus bar, on the insulators, and in the duct, in addition to the absence of indications of moisture intrusion into the duct. Enhance the Metal-Enclosed Bus Inspection Program for IP2 and IP3 to inspect bolted connections at least once every five years if performed visually or at least once every ten years using quantitative measurements such as thermography or contact resistance measurements. The first inspection will occur prior to the period of extended operation. The plant will process a change to applicable site procedure to remove the reference to "re-torquing" connections for phase bus maintenance and bolted connection maintenance.	IP2: September 28, 2013 IP3: December 12, 2015	NL-07-039 NL-07-153 NL-08-057	A.2.1.19 A.3.1.19 B.1.20 Audit Items 124, 133, 519
14	Implement the Non-EQ Bolted Cable Connections Program for IP2 and IP3 as described in LRA Section B.1.22.	IP2: September 28, 2013 IP3: December 12, 2015	NL-07-039	A.2.1.21 A.3.1.21 B.1.22

#	COMMITMENT	IMPLEMENTATION SCHEDULE	SOURCE	RELATED LRA SECTION / AUDIT ITEM
15	Implement the Non-EQ Inaccessible Medium-Voltage Cable Program for IP2 and IP3 as described in LRA Section B.1.23. This new program will be implemented consistent with the corresponding program described in NUREG-1801 Section XI.E3, Inaccessible Medium-Voltage Cables Not Subject To 10 CFR 50.49 Environmental Qualification Requirements.	IP2: September 28, 2013 IP3: December 12, 2015	NL-07-039 NL-07-153	A.2.1.22 A.3.1.22 B.1.23 Audit item 173
16	Implement the Non-EQ Instrumentation Circuits Test Review Program for IP2 and IP3 as described in LRA Section B.1.24. This new program will be implemented consistent with the corresponding program described in NUREG-1801 Section XI.E2, Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Used in Instrumentation Circuits.	IP2: September 28, 2013 IP3: December 12, 2015	NL-07-039 NL-07-153	A.2.1.23 A.3.1.23 B.1.24 Audit item 173
17	Implement the Non-EQ Insulated Cables and Connections Program for IP2 and IP3 as described in LRA Section B.1.25. This new program will be implemented consistent with the corresponding program described in NUREG-1801 Section XI.E1, Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements.	IP2: September 28, 2013 IP3: December 12, 2015	NL-07-039 NL-07-153	A.2.1.24 A.3.1.24 B.1.25 Audit item 173
18	Enhance the Oil Analysis Program for IP2 to sample and analyze lubricating oil used in the SBO/Appendix R diesel generator consistent with oil analysis for other site diesel generators. Enhance the Oil Analysis Program for IP2 and IP3 to sample and analyze generator seal oil and turbine hydraulic control oil. Enhance the Oil Analysis Program for IP2 and IP3 to formalize preliminary oil screening for water and particulates and laboratory analyses including defined acceptance criteria for all components included in the scope of this program. The program will specify corrective actions in the event acceptance criteria are not met. Enhance the Oil Analysis Program for IP2 and IP3 to formalize trending of preliminary oil screening results as well as data provided from independent laboratories.	IP2: September 28, 2013 IP3: December 12, 2015	NL-07-039	A.2.1.25 A.3.1.25 B.1.26

#	COMMITMENT	IMPLEMENTATION SCHEDULE	SOURCE	RELATED LRA SECTION / AUDIT ITEM
19	Implement the One-Time Inspection Program for IP2 and IP3 as described in LRA Section B.1.27. This new program will be implemented consistent with the corresponding program described in NUREG-1801, Section XI.M32, One-Time Inspection.	IP2: September 28, 2013 IP3: December 12, 2015	NL-07-039 NL-07-153	A.2.1.26 A.3.1.26 B.1.27 Audit item 173
20	Implement the One-Time Inspection – Small Bore Piping Program for IP2 and IP3 as described in LRA Section B.1.28. This new program will be implemented consistent with the corresponding program described in NUREG-1801, Section XI.M35, One-Time Inspection of ASME Code Class I Small-Bore Piping.	IP2: September 28, 2013 IP3: December 12, 2015	NL-07-039 NL-07-153	A.2.1.27 A.3.1.27 B.1.28 Audit item 173
21	Enhance the Periodic Surveillance and Preventive Maintenance Program for IP2 and IP3 as necessary to assure that the effects of aging will be managed such that applicable components will continue to perform their intended functions consistent with the current licensing basis through the period of extended operation.	IP2: September 28, 2013 IP3: December 12, 2015	NL-07-039	A.2.1.28 A.3.1.28 B.1.29
22	Enhance the Reactor Vessel Surveillance Program for IP2 and IP3 revising the specimen capsule withdrawal schedules to draw and test a standby capsule to cover the peak reactor vessel fluence expected through the end of the period of extended operation. Enhance the Reactor Vessel Surveillance Program for IP2 and IP3 to require that tested and untested specimens from all capsules pulled from the reactor vessel are maintained in storage.	IP2: September 28, 2013 IP3: December 12, 2015	NL-07-039	A.2.1.31 A.3.1.31 B.1.32
23	Implement the Selective Leaching Program for IP2 and IP3 as described in LRA Section B.1.33. This new program will be implemented consistent with the corresponding program described in NUREG-1801, Section XI.M33 Selective Leaching of Materials.	IP2: September 28, 2013 IP3: December 12, 2015	NL-07-039 NL-07-153	A.2.1.32 A.3.1.32 B.1.33 Audit item 173
24	Enhance the Steam Generator Integrity Program for IP2 and IP3 to require that the results of the condition monitoring assessment are compared to the operational assessment performed for the prior operating cycle with differences evaluated.	IP2: September 28, 2013 IP3: December 12, 2015	NL-07-039	A.2.1.34 A.3.1.34 B.1.35

#	COMMITMENT	IMPLEMENTATION SCHEDULE	SOURCE	RELATED LRA SECTION / AUDIT ITEM
25	Enhance the Structures Monitoring Program to explicitly specify that the following structures are included in the program. • Appendix R diesel generator foundation (IP3) • Appendix R diesel generator fuel oil tank vault (IP3) • Appendix R diesel generator switchgear and enclosure (IP3) • city water storage tank foundation • condensate storage tanks foundation (IP3) • containment access facility and annex (IP3) • discharge canal (IP2/3) • emergency lighting poles and foundations (IP2/3) • fire pumphouse (IP2) • fire protection pumphouse (IP3) • fire water storage tank foundations (IP2/3) • gas turbine 1 fuel storage tank foundation • maintenance and outage building-elevated passageway (IP2) • new station security building (IP2) • nuclear service building (IP1) • primary water storage tank foundation (IP3) • refueling water storage tank foundation (IP3) • security access and office building (IP3) • service water pipe chase (IP2/3) • service water valve pit (IP3) • superheater stack • transformer/switchyard support structures (IP2) • waste holdup tank pits (IP2/3) Enhance the Structures Monitoring Program for IP2 and IP3 to clarify that in addition to structural steel and concrete, the following commodities (including their anchorages) are inspected for each structure as applicable. • cable trays and supports • concrete portion of reactor vessel supports • conduits and supports • cranes, rails and girders • equipment pads and foundations • fire proofing (pyrocrete) • HVAC duct supports • jib cranes • manholes and duct banks • manways, hatches and hatch covers • monorails	IP2: September 28, 2013 IP3: December 12, 2015	NL-07-039 NL-07-153 NL-08-057	A.2.1.35 A.3.1.35 B.1.36 Audit items 86, 87, 88, 417

#	COMMITMENT	IMPLEMENTATION SCHEDULE	SOURCE	RELATED LRA SECTION / AUDIT ITEM
	• new fuel storage racks • sumps, sump screens, strainers and flow barriers Enhance the Structures Monitoring Program for IP2 and IP3 to inspect inaccessible concrete areas that are exposed by excavation for any reason. IP2 and IP3 will also inspect inaccessible concrete areas in environments where observed conditions in accessible areas exposed to the same environment indicate that significant concrete degradation is occurring. Enhance the Structures Monitoring Program for IP2 and IP3 to perform inspections of elastomers (seals, gaskets, seismic joint filler, and roof elastomers) to identify cracking and change in material properties and for inspection of aluminum vents and louvers to identify loss of material. Enhance the Structures Monitoring Program for IP2 and IP3 to perform an engineering evaluation of groundwater samples to assess aggressiveness of groundwater to concrete on a periodic basis (at least once every five years). IPEC will obtain samples from at least 5 wells that are representative of the ground water surrounding below-grade site structures and perform an engineering evaluation of the results from those samples for sulfates, pH and chlorides. Additionally, to assess potential indications of spent fuel pool leakage, IPEC will sample for tritium in groundwater wells in close proximity to the IP2 spent fuel pool at least once every 3 months. Enhance the Structures Monitoring Program for IP2 and IP3 to perform inspection of normally submerged concrete portions of the intake structures at least once every 5 years. Inspect the baffling/grating partition and support platform of the IP3 intake structure at least once every 5 years. Enhance the Structures Monitoring Program for IP2 and IP3 to perform inspection of the degraded areas of the water control structure once per 3 years rather than the normal frequency of once per 5 years during the PEO.		NL-08-127	Audit Item 360 Audit Item 358

#	COMMITMENT	IMPLEMENTATION SCHEDULE	SOURCE	RELATED LRA SECTION / AUDIT ITEM
26	Implement the Thermal Aging Embrittlement of Cast Austenitic Stainless Steel (CASS) Program for IP2 and IP3 as described in LRA Section B.1.37. This new program will be implemented consistent with the corresponding program described in NUREG-1801, Section XI.M12, Thermal Aging Embrittlement of Cast Austenitic Stainless Steel (CASS) Program.	IP2: September 28, 2013 IP3: December 12, 2015	NL-07-039 NL-07-153	A.2.1.36 A.3.1.36 B.1.37 Audit item 173
27	Implement the Thermal Aging and Neutron Irradiation Embrittlement of Cast Austenitic Stainless Steel (CASS) Program for IP2 and IP3 as described in LRA Section B.1.38. This new program will be implemented consistent with the corresponding program described in NUREG-1801 Section XI.M13, Thermal Aging and Neutron Embrittlement of Cast Austenitic Stainless Steel (CASS) Program.	IP2: September 28, 2013 IP3: December 12, 2015	NL-07-039 NL-07-153	A.2.1.37 A.3.1.37 B.1.38 Audit item 173
28	Enhance the Water Chemistry Control – Closed Cooling Water Program to maintain water chemistry of the IP2 SBO/Appendix R diesel generator cooling system per EPRI guidelines. Enhance the Water Chemistry Control – Closed Cooling Water Program to maintain the IP2 and IP3 security generator and fire protection diesel cooling water pH and glycol within limits specified by EPRI guidelines.	IP2: September 28, 2013 IP3: December 12, 2015	NL-07-039 NL-08-057	A.2.1.39 A.3.1.39 B.1.40 Audit item 509
29	Enhance the Water Chemistry Control – Primary and Secondary Program for IP2 to test sulfates monthly in the RWST with a limit of <150 ppb.	IP2: September 28, 2013	NL-07-039	A.2.1.40 B.1.41
30	For aging management of the reactor vessel internals, IPEC will (1) participate in the industry programs for investigating and managing aging effects on reactor internals; (2) evaluate and implement the results of the industry programs as applicable to the reactor internals; and (3) upon completion of these programs, but not less than 24 months before entering the period of extended operation, submit an inspection plan for reactor internals to the NRC for review and approval.	IP2: September 28, 2011 IP3: December 12, 2013	NL-07-039	A.2.1.41 A.3.1.41
31	Additional P-T curves will be submitted as required per 10 CFR 50, Appendix G prior to the period of extended operation as part of the Reactor Vessel Surveillance Program.	IP2: September 28, 2013 IP3: December 12, 2015	NL-07-039	A.2.2.1.2 A.3.2.1.2 4.2.3

#	COMMITMENT	IMPLEMENTATION SCHEDULE	SOURCE	RELATED LRA SECTION / AUDIT ITEM
32	As required by 10 CFR 50.61(b)(4), IP3 will submit a plant-specific safety analysis for plate B2803-3 to the NRC three years prior to reaching the RT_{PTS} screening criterion. Alternatively, the site may choose to implement the revised PTS ~~(10 CFR 50.61)~~ rule when approved.~~, which would permit use of Regulatory Guide 1.99, Revision 3.~~	IP3: December 12, 2015	NL-07-039 NL-08-127	A.3.2.1.4 4.2.5
33	At least 2 years prior to entering the period of extended operation, for the locations identified in LRA Table 4.3-13 (IP2) and LRA Table 4.3-14 (IP3), under the Fatigue Monitoring Program, IP2 and IP3 will implement one or more of the following: (1) Consistent with the Fatigue Monitoring Program, Detection of Aging Effects, update the fatigue usage calculations using refined fatigue analyses to determine valid CUFs less than 1.0 when accounting for the effects of reactor water environment. This includes applying the appropriate Fen factors to valid CUFs determined in accordance with one of the following: 1. For locations in LRA Table 4.3-13 (IP2) and LRA Table 4.3-14 (IP3), with existing fatigue analysis valid for the period of extended operation, use the existing CUF. 2. Additional plant-specific locations with a valid CUF may be evaluated. In particular, the pressurizer lower shell will be reviewed to ensure the surge nozzle remains the limiting component. 3. Representative CUF values from other plants, adjusted to or enveloping the IPEC plant specific external loads may be used if demonstrated applicable to IPEC. 4. An analysis using an NRC-approved version of the ASME code or NRC-approved alternative (e.g., NRC-approved code case) may be performed to determine a valid CUF. (2) Consistent with the Fatigue Monitoring Program, Corrective Actions, repair or replace the affected locations before exceeding a CUF of 1.0.	IP2: September 28, 2011 IP3: December 12, 2013	NL-07-039 NL-07-153 NL-08-021	A.2.2.2.3 A.3.2.2.3 4.3.3 Audit item 146
34	IP2 SBO / Appendix R diesel generator will be installed and operational by April 30, 2008. This committed change to the facility meets the requirements of 10 CFR 50.59(c)(1) and, therefore, a license amendment pursuant to 10 CFR 50.90 is not required.	April 30, 2008 Complete	NL-07-078 NL-08-074	2.1.1.3.5

#	COMMITMENT	IMPLEMENTATION SCHEDULE	SOURCE	RELATED LRA SECTION / AUDIT ITEM
35	Perform a one-time inspection of representative sample area of IP2 containment liner affected by the 1973 event behind the insulation, prior to entering the extended period of operation, to assure liner degradation is not occurring in this area. Perform a one-time inspection of representative sample area of the IP3 containment steel liner at the juncture with the concrete floor slab, prior to entering the extended period of operation, to assure liner degradation is not occurring in this area.	IP2: September 28, 2013 IP3: December 12, 2015	NL-08-127	Audit Item 27
36	Perform a one-time Inspection and evaluation of a sample of potentially affected IP2 refueling cavity concrete prior to the period of extended operation. The sample will be obtained by core boring the refueling cavity wall in an area that is susceptible to exposure to borated water leakage. The inspection will include an assessment of embedded reinforcing steel.	IP2: September 28, 2013	NL-08-127	Audit Item 359
37	Enhance the Containment Inservice Inspection (CII-IWL) Program to include inspections of the containment using enhanced characterization of degradation (i.e., quantifying the dimensions of noted indications through the use of optical aids) during the period of extended operation. The enhancement includes obtaining critical dimensional data of degradation where possible through direct measurement or the use of scaling technologies for photographs, and the use of consistent vantage points for visual inspections.	IP2: September 28, 2013 IP3: December 12, 2015	NL-08-127	Audit Item 361