RASE-371

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August 10, 2010

Morgan Lewis

COUNSELORS AT LAW
DOCKETED
USNRC

August 11, 2010 (8:30a.m.)

OFFICE OF SECRETARY RULEMAKINGS AND ADJUDICATIONS STAFF

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

Washington, DC 20555-0001

Docket: Entergy Nuclear Operations, Inc. (Indian Point Nuclear Generating

Units 2 and 3), Docket Nos. 50-247-LR and 50-286-LR

RE: Notification of Entergy's Submittal Regarding Completion of

Commitment 33 for Indian Point Units 2 and 3

Dear Administrative Judges:

Entergy Nuclear Operations, Inc. ("Entergy") is providing this notice to the Atomic Safety and Licensing Board and the parties regarding Entergy's August 9, 2010 submittal of a notice to the U.S. Nuclear Regulatory Commission ("NRC") regarding completion of Commitment 33 to the Indian Point Units 2 and 3 License Renewal Application associated with the Fatigue Monitoring Program. See NL-10-082, Letter from Fred Dacimo, Entergy, to NRC Document Control Desk, "License Renewal Application – Completion of Commitment #33 Regarding the Fatigue Monitoring Program" (August 9, 2010). A copy of NL-10-082 is attached for your reference. Counsel is providing this notification insofar as the completion of Commitment 33 may be relevant and material to admitted contentions NYS-26/26A and Riverkeeper TC-1/1A.

Morgan Lewis

Lawrence G. McDade, Chairman Dr. Richard E. Wardwell Dr. Kaye D. Lathrop August 10, 2010 Page 2

Respectfully submitted,

Kathryn M. Sutton, Esq. Paul M. Bessette, Esq.

Counsel for Entergy Nuclear Operations, Inc.

CBM/als Attachment

cc: Service List

UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of		Docket Nos.	50-247-LR and
ENTERGY NUCLEAR OPERATIONS, INC.)		50-286-LR
)	•	
(Indian Point Nuclear Generating Units 2 and 3)))	August 10, 20	010

CERTIFICATE OF SERVICE

I hereby certify that copies of the letter entitled "Notification of Entergy's Submittal Regarding Completion of Commitment 33 for Indian Point Units 2 and 3," dated August 10, 2010, were served this 10th day of August, 2010 upon the persons listed below, by first class mail and e-mail as shown below.

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* Original and 2 copies provided to the Office of the Secretary.

Paul M. Bessette, Esq.
Counsel for Entergy Nuclear Operations, Inc.

DB1/65420875.1



Entergy Nuclear Northeast Indian Point Energy Center 450 Broadway, GSB P.O. Box 249 Buchanan, N.Y. 10511-0249 Tel (914) 788-2055

Fred Dacimo Vice President License Renewal

NL-10-082

August 9, 2010

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

SUBJECT:

License Renewal Application - Completion of Commitment #33

Regarding the Fatigue Monitoring Program

Indian Point Nuclear Generating Unit Nos. 2 and 3

Docket Nos. 50-247 and 50-286 License Nos. DPR-26 and DPR-64

REFERENCE

- 1. Entergy Letter dated April 23, 2007, F. R. Dacimo to Document Control Desk, "License Renewal Application" (NL-07-039)
- 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 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 license. This letter contains information supporting the completion of commitment 33 to the License Renewal Application regarding the Fatigue Monitoring Program.

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

Sincerely,

FD/mb

Attachments:

1. Environmental Fatigue Evaluations

2. List of Regulatory Commitments

cc:

Mr. S. J. Collins, Regional Administrator, NRC Region |

Mr. J. Boska, Senior Project Manager, NRC, NRR, DORL

Mr. Sherwin E. Turk, NRC Office of General Counsel, Special Counsel

Ms. Kimberly Green, NRC Safety Project Manager NRC Resident Inspectors Office, Indian Point Mr. Paul Eddy, NYS Dept. of Public Service

Mr. Francis J. Murray, Jr., President and CEO, NYSERDA

ATTACHMENT 1 TO NL-10-082

Environmental Fatigue Evaluations

ENTERGY NUCLEAR OPERATIONS, INC INDIAN POINT NUCLEAR GENERATING UNITS 2 AND 3 DOCKET NOS. 50-247 & 50-286

Attachment 1 NL-10-082 Docket Nos. 50-247 and 50-286 Page 1 of 4

INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 AND 3 LICENSE RENEWAL APPLICATION ENVIRONMENTAL FATIGUE EVALUATIONS

Environmental Fatigue Evaluation for Indian Point Unit 2 and Unit 3

Entergy has applied for renewed operating licenses for Indian Point Nuclear Generating Unit 2 and Unit 3 (IP2 and IP3). In the license renewal application, Entergy committed to address environmentally assisted fatigue. Entergy's commitment, amended by letter, NL-08-021, dated January 22, 2008, reads as follows.

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:
 - I. 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.

Entergy has updated the fatigue usage calculations using refined fatigue analyses to determine CUFs when accounting for the effects of reactor water environment. This includes applying the appropriate Fen factors to valid CUFs for the locations shown in LRA Table 4.3-13 and LRA Table 4.3-14.

The tables from the LRA are repeated as follows with the updated CUF values inserted.

The results of the refined analyses are shown in the tables as underlined values.

Attachment 1 NL-10-082 Docket Nos. 50-247 and 50-286 Page 2 of 4

Table 4.3-13 IP2 Cumulative Usage Factors for NUREG/CR-6260 Limiting Locations

		,	· · · · · · · · · · · · · · · · · · ·	·			
N	Specific		Material CUF of		Per NUREG/CR-6583 or NUREG/CR-5704		
,	Location	Location	Туре	Record	F _{en}	Environmentall y Adjusted CUF	
.1	Vessel shell and lower head	Bottom head to shell	LAS	0.004	2.45	0.01	
2	Vessel inlet and outlet nozzles	Reactor vessel inlet nozzle	LAS	0.05	2.45	0.12	
2	Vessel inlet and outlet nozzles	Reactor vessel outlet nozzle	LAS	0.281	2.45	0.69	
3	Pressurizer surge line nozzles	Pressurizer surge line nozzle	LAS	0.264 0.109	2.45 1.74	0.64 6 0.188	
3	Pressurizer surge line piping	Surge line piping to safe end weld	SS	0.6 <u>0.062</u>	15.35 <u>13.26</u>	9.21 <u>0.822</u>	
4	RCS piping charging system nozzle	Charging system nozzle	SS	0.99 0.0323	15.35 <u>8.7</u>	15.20 0.2809	
5	RCS piping safety injection nozzle	NA	SS	NA ² 0.1083	15.35 7.8975	NA ² 0.8553	
6	RHR Class 1 piping	NA	SS	NA ² 0.0721	15.35 13.08	NA ² 0.9434	

Attachment 1 NL-10-082 Docket Nos. 50-247 and 50-286 Page 3 of 4

Table 4.3-14
IP3 Cumulative Usage Factors for NUREG/CR-6260 Limiting Locations

	WIDEO COCO I	IP3 Plant-	Material	CUF of		REG/CR-6583 or REG/CR-5704	
	NUREG-6260 Location	Specific Location	Type	Record	F _{en}	Environmentally Adjusted CUF	
1	Vessel shell and lower head	Bottom head to shell	LAS	0.02	2.45	0.05	
2	Vessel inlet and outlet nozzles	Reactor vessel inlet nozzle	LAS	0.049	2.45	0.12	
2	Vessel inlet and outlet nozzles	Reactor vessel outlet nozzle	LAS	0.259	2.45	0.64	
3	Pressurizer surge line nozzles	Pressurizer surge line nozzle	LAS	0.9612 0.0903	2.45 1.74	2.35 0.157	
3	Pressurizer surge line piping	Surge line piping to safe end weld	SS	0.6 0.0411	15.35 <u>14.45</u>	9.21 <u>0.594</u>	
4	RCS piping charging system nozzle	NA	SS	NA ² 0.1812	15.35 <u>3.98</u>	NA ² 0.722	
5	RCS piping safety injection nozzle	NA	SS	NA ² 0.1709	15.35 <u>5.0117</u>	NA ² 0.8565	
6	RHR Class 1 piping	NA	SS	NA ² 0.1279	15.35 7.79	NA ² 0.9961	

Attachment 1 NL-10-082 Docket Nos. 50-247 and 50-286 Page 4 of 4

As described in LRA Section 4.3.3 and shown in Tables 4.3-13 and 4.3-14, the CUFs for the reactor vessel locations were not changed. The evaluation documented in the LRA used bounding Fens applied to the CUFs of record for the bottom head to shell region, the reactor vessel inlet nozzle and the reactor vessel outlet nozzle. The tables show the Cumulative Usage Factors are all below 1.0 for these three locations for both units.

The stress and fatigue evaluations for the remaining piping components listed in Table 4.3-13 and 4.3-14 were performed using standard methods of the ASME Code, Section III. Detailed stress models of the surge line hot leg nozzle, pressurizer surge nozzle, reactor coolant piping charging system nozzle, reactor coolant piping safety injection nozzle, and the RHR system class 1 piping locations were prepared. The analyst developed detailed stress history inputs for all transients considered in the evaluation, which were subsequently used to provide detailed inputs used in the EAF evaluations. The ASME Code evaluations were performed for the piping components to reduce conservatism in the analyses or because the current licensing basis (CLB) qualification was to the ANSI B31.1 Power Piping Code, which did not require a fatigue usage factor calculation. The evaluations were limited to the stress qualifications related to the fatigue requirements of the ASME Code. The primary stress qualifications documented in the CLB remain applicable for the components evaluated.

The evaluation of EAF was accomplished through the application of Fen factors, as described in NUREG/CR-5704 for the stainless steels in the pressurizer surge line, the reactor coolant piping charging and safety injection system nozzles, and the RHR system Class 1 piping. In addition, Fen factors for the pressurizer surge nozzle dissimilar metal weld also considered the carbon steel factors in NUREG/CR-6583. The Fen factors are calculated based on detailed inputs described in the applicable NUREG and are directly applied to the ASME Code fatigue results.

The refined fatigue analyses of the Indian Point Unit 2 and Unit 3 piping locations corresponding to the locations identified in NUREG/CR-6260 for older vintage Westinghouse plants demonstrate that cumulative fatigue usage factors including consideration of reactor water environmental effects are below a value of 1.0 for transients postulated for 60 years of operation.

The results of this evaluation resolve commitment number 33 in the NRC Safety Evaluation Report on license renewal for Indian Point Nuclear Generating Unit 2 and Unit 3.

ATTACHMENT 2 TO NL-10-082

List of Regulatory Commitments

ENTERGY NUCLEAR OPERATIONS, INC INDIAN POINT NUCLEAR GENERATING UNITS 2 AND 3 DOCKET NOS. 50-247 & 50-286

Attachment 2 NL-10-082 Docket Nos. 50-247 and 50-286 Page 1 of 17

List of Regulatory Commitments

Rev. 12

The following table identifies those actions committed to by Entergy in this document. Changes are shown as strikethroughs for deletions and underlines for <u>additions</u>.

#	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.	IP2: September 28, 2013 IP3: December 12,	NL-07-039	A.2.1.1 A.3.1.1 B.1.1
	Enhance the Aboveground Steel Tanks Program for IP2 and IP3 to require trending of thickness measurements when material loss is detected.	2015		
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.	IP2: September 28, 2013 IP3: December 12,	NL-07-039 NL-07-153	A.2.1.2 A.3.1.2 B.1.2 Audit Items 201, 241,
	The Bolting Integrity Program manages loss of preload and loss of material for all external bolting.	2015	*	270

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#	COMMITMENT	IMPLEMENTATION SCHEDULE	SOURCE	RELATED LRA SECTION / AUDIT ITEM
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. Include in the Buried Piping and Tanks Inspection Program described in LRA Section B.1.6 a risk assessment of in-scope buried piping and tanks that includes consideration of the impacts of buried piping or tank leakage and of conditions affecting the risk for corrosion. Classify pipe segments and tanks as having a high, medium or low impact of leakage based on the safety class, the hazard posed by fluid contained in the piping and the impact of leakage on reliable plant operation. Determine corrosion risk through consideration of piping or tank material, soil resistivity, drainage, the presence of cathodic protection and the type of coating. Establish inspection priority and frequency for periodic inspections of the in-scope piping and tanks based on the results of the risk assessment. Perform inspections using inspection techniques with demonstrated effectiveness.	IP2: September 28, 2013 IP3: December 12, 2015	NL-07-039 NL-07-153 NL-09-106 NL-09-111	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.	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,
	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%.		NE do do?	510
	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.			

#	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.	IP2: September 28, 2013	NL-07-039 NL-07-153	A.2.1.11 A.3.1.11 B.1.12, Audit Item 164
	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.	IP3: December 12, 2015		
7	Enhance the Fire Protection Program to inspect external surfaces of the IP3 RCP oil collection systems for loss of material each refueling cycle.	IP2: September 28, 2013	NL-07-039	A.2.1.12 A.3.1.12 B.1.13
	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.	IP3: December 12, 2015		
	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.			

Attachment 2 NL-10-082 Docket Nos. 50-247 and 50-286 Page 5 of 17

				·
·#	COMMITMENT	IMPLEMENTATION SCHEDULE	SOURCE	RELATED
	·	300,23022		/ AUDIT ITEM
8	Enhance the Fire Water Program to include inspection	IP2:	NL-07-039	A.2.1.13
	of IP2 and IP3 hose reels for evidence of corrosion.	September 28,		A.3.1.13
	Acceptance criteria will be revised to verify no	2013	NI 07 150	B.1.14
	unacceptable signs of degradation.	IP3:	NL-07-153	Audit Items 105, 106
	Enhance the Fire Water Program to replace all or test	December 12,	NL-08-014	1,00, 100
	a sample of IP2 and IP3 sprinkler heads required for	2015		
	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			
1	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.		•	
			'	
1	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.			

#	COMMITMENT	IMPLEMENTATION SCHEDULE	SOURCE	RELATED LRA SECTION / AUDIT ITEM
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.	IP2: September 28, 2013 IP3: December 12, 2015	NL-07-039	A.2.1.15 A.3.1.15 B.1.16
	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.			

#	COMMITMENT	IMPLEMENTATION SCHEDULE		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.	IP2: September 28, 2013	NL-07-039 NL-07-153	A.2.1.16 A.3.1.16 B.1.17, Audit Item
	 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 	IP3: December 12, 2015		52
	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			
11	the program. Establish acceptance criteria for heat exchangers visually inspected to include no indication of tube erosion, vibration wear, corrosion, pitting, fouling, or scaling. Delete commitment.		NL-09-018 NL-09-056	

#	COMMITMENT	IMPLEMENTATION	SOURCE	RELATED
1 "		SCHEDULE		LRA SECTION
<u> </u>		IDO:	NII 07 000	/ AUDIT ITEM
12	Enhance the Masonry Wall Program for IP2 and IP3	IP2:	NL-07-039	A.2.1.18
1	to specify that the IP1 intake structure is included in	September 28, 2013		A.3.1.18
	the program.	KU13		B.1.19
		IP3:		,
		December 12.		
· -		2015		
13	Enhance the Metal-Enclosed Bus Inspection Program	IP2:	NL-07-039	A.2.1.19
'	to add IP2 480V bus associated with substation A to	September 28,		A.3.1.19
	the scope of bus inspected.	2013		B.1.20
	<u> </u>		NL-07-153	Audit Items
	Enhance the Metal-Enclosed Bus Inspection Program	IP3:		124,
	for IP2 and IP3 to visually inspect the external surface	December 12,	NL-08-057	133, 519
	of MEB enclosure assemblies for loss of material at	2015		
	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.			
	THE STREET]		
	Enhance the Metal-Enclosed Bus Inspection Program			
	to add acceptance criteria for MEB internal visual	1		
	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.			
	•	<u> </u>		
	Enhance the Motel England Due Inspection Decree			
	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 live years if performed visitally or at least		• .	
	measurements such as thermography or contact	. 1		.
	resistance measurements. The first inspection will			
,	occur prior to the period of extended operation.			
	,			
	The plant will process a change to applicable site			[
1	procedure to remove the reference to "re-torquing"			1
<u> </u>	connections for phase bus maintenance and bolted			
	connection maintenance.			
14	Implement the Non-EQ Bolted Cable Connections	IP2:	NL-07-039	A.2.1.21
	Program for IP2 and IP3 as described in LRA Section	September 28,		A.3.1.21
	B.1.22.	2013		B.1.22
		lpo.		
•		IP3:]
	•	December 12,		
Щ		2015		

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#	COMMITMENT	IMPLEMENTATION	SOURCE	RELATED
		SCHEDULE		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.	IP2: September 28, 2013	NL-07-039 NL-07-153	A.2.1.22 A.3.1.22 B.1.23 Audit item
	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.	IP3: December 12, 2015		173
16	Implement the Non-EQ Instrumentation Circuits Test Review Program for IP2 and IP3 as described in LRA Section B.1.24.	IP2: September 28, 2013	NL-07-039 NL-07-153	A.2.1.23 A.3.1.23 B.1.24 Audit item
	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.	IP3: December 12, 2015		173
17.	Implement the Non-EQ Insulated Cables and Connections Program for IP2 and IP3 as described in LRA Section B.1.25.	IP2: September 28, 2013	NL-07-039 NL-07-153	A.2.1.24 A.3.1.24 B.1.25 Audit item
	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.	IP3: December 12, 2015	112 07 100	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.	IP2: September 28, 2013 IP3:	NL-07-039	A.2.1.25 A.3.1.25 B.1.26
	Enhance the Oil Analysis Program for IP2 and IP3 to sample and analyze generator seal oil and turbine hydraulic control oil.	December 12, 2015		
	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.			

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#	COMMITMENT	IMPLEMENTATION	SOURCE	RELATED
		SCHEDULE		LRA SECTION / AUDIT ITEM
19	Implement the One-Time Inspection Program for IP2, and IP3 as described in LRA Section B.1.27.	IP2: September 28, 2013	NL-07-039	A.2.1.26 A.3.1.26 B.1.27
	This new program will be implemented consistent with the corresponding program described in NUREG-1801, Section XI.M32, One-Time Inspection.	IP3: December 12, 2015	NL-07-153	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.	IP2: September 28, 2013	NL-07-039 NL-07-153	A.2.1.27 A.3.1.27 B.1.28 Audit item
	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.	IP3: December 12, 2015		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.	IP2: September 28, 2013 IP3: December 12,	NL-07-039	A.2.1.31 A.3.1.31 B.1.32
	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.	2015		
23	Implement the Selective Leaching Program for IP2 and IP3 as described in LRA Section B.1.33.	IP2: September 28, 2013	NL-07-039	A.2.1.32 A.3.1.32 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.	IP3: December 12, 2015	NL-07-153	Audit item 173

#	COMMITMENT	IMPLEMENTATION	SOURCE	RELATED
"	33	SCHEDULE		LRA SECTION / AUDIT ITEM
		IP2:	NL-07-039	A.2.1.34
24	Enhance the Steam Generator Integrity Program for	September 28,		A.3.1.34
]	IP2 and IP3 to require that the results of the condition	2013		B.1.35
	monitoring assessment are compared to the			
	operational assessment performed for the prior	IP3:		
	operating cycle with differences evaluated.	December 12,		
		2015	•	
,				·
05	Enhance the Structures Monitoring Program to	IP2:	NL-07-039	A.2.1.35
25		September 28,		A.3.1.35
	included in the program.	2013	:	B.1.36
	Appendix R diesel generator foundation (IP3)	,	NL-07-153	
	Appendix R diesel generator fuel oil tank vault	IP3:		Audit items
ŀ	(IP3)	December 12,		86, 87, 88,
	Appendix R diesel generator switchgear and	2015	NL-08-057	417
	enclosure (IP3)			
1 .	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) 			
1.	fire pumphouse (IP2)			
	fire protection pumphouse (IP3)			
	fire water storage tank foundations (IP2/3)			
	gas turbine 1 fuel storage tank foundation			
j .	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)			
1	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	٠		
1 .	applicable.			
	spiral and the spiral			
	cable trays and supports		.	
	· · · · · · · · · · · · · · · · · · ·			

		· · · · · · · · · · · · · · · · · · ·		·····
#	COMMITMENT	IMPLEMENTATION SCHEDULE	SOURCE	RELATED LRA SECTION / AUDIT ITEM
	concrete portion of reactor vessel supports	· ·		
	conduits and supports		•	
	cranes, rails and girders	*	· . · · · .	
* * *	equipment pads and foundations		•	*
	fire proofing (pyrocrete)			į
	HVAC duct supports	,		
	· · · · · · · · · · · · · · · · · · ·			
	jib cranesmanholes and duct banks			
	!			1
	• 'manways, hatches and hatch covers			
	monorails	j		
	new fuel storage racks			·
	sumps, sump screens, strainers and flow barriers			
		4 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		
	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.			
	identity 1888 of Material.			
	·			
	Enhance the Structures Monitoring Program for IP2		NI 00 407	A
	and IP3 to perform an engineering evaluation of		NL-08-127	Audit Item
į	groundwater samples to assess aggressiveness of		<u>.</u>	360
	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.			
	The state of the s			
	Enhance the Structures Monitoring Program for IP2	·		•
•	and IP3 to perform inspection of normally submerged			
	and it a to partition and a training addition god			

#	COMMITMENT	IMPLEMENTATION	SOURCE	RELATED
ŀ		SCHEDULE		LRA SECTION / AUDIT ITEM
	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.			Audit Item 358
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.	IP2: September 28, 2013	NL-07-039 NL-07-153	A.2.1.36 A.3.1.36 B.1.37 Audit item
	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.	IP3: December 12, 2015		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.	IP2: September 28, 2013 IP3:	NL-07-039 NL-07-153	A.2.1.37 A.3.1.37 B.1.38 Audit item 173
	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.	December 12, 2015		170
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.	IP2: September 28, 2013 IP3:	NL-07-039 NL-08-057	A.2.1.39 A.3.1.39 B.1.40 Audit item 509
	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.	December 12, 2015	·	555
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

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#	COMMITMENT	IMPLEMENTATION SCHEDULE	SOURCE	RELATED LRA SECTION
·	· · ·			/ AUDIT ITEM
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	IP2: September 28, 2011	NL-07-039	A.2.1.41 A.3.1.41
	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.	IP3: December 12, 2013		
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,	NL-07-039	A.2.2.1.2 A.3.2.1.2 4.2.3
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 rule when approved.	2015 IP3: December 12, 2015	NL-07-039 NL-08-127	A.3.2.1.4 4.2.5

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#	COMMITMENT	IMPLEMENTATION SCHEDULE	SOURCE	RELATED LRA SECTION / AUDIT ITEM
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	IP2: September 28, 2011 IP3: December 12, 2013 Complete	NL-07-039 NL-07-153 NL-08-021 <u>NL-10-082</u>	A.2.2.2.3 A.3.2.2.3 4.3.3 Audit item 146
	CUFs determined in accordance with one of the following:			
	 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. 			
	 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. 			
	 Representative CUF values from other plants, adjusted to or enveloping the IPEC plant specific external loads may be used if demonstrated applicable to IPEC. 			
	 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.			
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	SOURCE	RELATED
"	O THINKIN I	SCHEDULE		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.	IP2: September 28, 2013	NL-08-127	Audit Item 27
	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.	IP3: December 12, 2015	NII 00 010	
	Any degradation will be evaluated for updating of the containment liner analyses as needed.		NL-09-018	
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	IP2: September 28, 2013	NL-08-127	Audit Item 359
	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.		. ·	
	Additional core bore samples will be taken, if the leakage is not stopped, prior to the end of the first ten years of the period of extended operation.		NL-09-056	
	A sample of leakage fluid will be analyzed to determine the composition of the fluid. If additional core samples are taken prior to the end of the first ten years of the period of extended operation, a sample of leakage fluid will be analyzed.		NL-09-079	
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 entire laids) during the	IP2: September 28, 2013 IP3:	NL-08-127	Audit Item 361
	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.	December 12, 2015		

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. #	COMMITMENT	IMPLEMENTATION SCHEDULE	SOURCE	RELATED LRA SECTION / AUDIT ITEM
38	For Reactor Vessel Fluence, should future core loading patterns invalidate the basis for the projected values of RTpts or C _V USE, updated calculations will be provided to the NRC.	IP2: September 28, 2013 IP3: December 12, 2015	NL-08-143	4.2.1
39	Deleted		NL-09-079	
40	Evaluate plant specific and appropriate industry operating experience and incorporate lessons learned in establishing appropriate monitoring and inspection frequencies to assess aging effects for the new aging management programs. Documentation of the operating experience evaluated for each new program will be available on site for NRC review prior to the period of extended operation.	IP2: September 28, 2013 IP3: December 12, 2015	NL-09-106	B.1.6 B.1.22 B.1.23 B.1.24 B.1.25 B.1.27 B.1.28 B.1.33 B.1.37 B.1.38