IPRenewal NPEmails

From: Green, Kimberly
Sent: Tuesday, March 24, 2009 7:48 AM
To: STROUD, MICHAEL D
Cc: Tyner, Donna
Subject: Draft Telecon Summary -- March 2, 2009
Attachments: Telecon Summary 03-02-09 DRAIs and OIs 03-24-09.doc

Mike and Donna,

Attached is the draft telecon summary for the call that occurred on March 2, 2009, regarding the draft follow up RAIs. Please let me know if any corrections or changes are needed.

Thanks,
Kimberly Green
Safety PM
(301) 415-1627
kimberly.green@nrc.gov

Hearing Identifier: IndianPointUnits2and3NonPublic_EX
Email Number: 1416

Mail Envelope Properties (Kimberly.Green@nrc.gov20090324074800)

Subject: Draft Telecon Summary -- March 2, 2009
Sent Date: 3/24/2009 7:48:29 AM
Received Date: 3/24/2009 7:48:00 AM
From: Green, Kimberly

Created By: Kimberly.Green@nrc.gov

Recipients:
"Tyner, Donna" <dtyner@entergy.com>
Tracking Status: None
"STROUD, MICHAEL D" <MSTROUD@entergy.com>
Tracking Status: None

Post Office:

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MESSAGE	342	3/24/2009 7:48:00 AM
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Options
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Return Notification: No
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LICENSEE: Entergy Nuclear Operations, Inc.

FACILITY: Indian Point Nuclear Generating Unit Nos. 2 and 3

SUBJECT: SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON MARCH 2, 2009, BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND ENTERGY NUCLEAR OPERATIONS, INC., CONCERNING DRAFT REQUEST FOR ADDITIONAL INFORMATION PERTAINING TO THE INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 AND 3, LICENSE RENEWAL APPLICATION – OPEN ITEMS

The U.S. Nuclear Regulatory Commission (NRC or the staff) and representatives of Entergy Nuclear Operations, Inc., held a telephone conference call on March 2, 2009, to discuss and clarify the staff's draft request for additional information (D-RAI) concerning certain open items identified in the Safety Evaluation Report with Open Items Related to the License Renewal of Indian Point Nuclear Generating Unit Nos. 2 and 3. The telephone conference call was useful in clarifying the intent of the staff's D-RAI.

Enclosure 1 provides a listing of the participants and Enclosure 2 contains a listing of the D-RAI items discussed with the applicant, including a brief description on the status of the items.

The applicant had an opportunity to comment on this summary.

Kimberly Green, Safety Project Manager
Projects Branch 2
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket Nos. 50-247 and 50-286

Enclosures:
1. List of Participants
2. List of Draft Request for Additional Information

cc w/encls: See next page

LICENSEE: Entergy Nuclear Operations, Inc.

FACILITY: Indian Point Nuclear Generating Unit Nos. 2 and 3

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Kimberly Green, Safety Project Manager
Projects Branch 2
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Office of Nuclear Reactor Regulation

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cc w/encls: See next page

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OFFICE	LA:DLR	PM:RPB2:DLR	BC:RPB2:DLR
NAME		KGreen	DWrona
DATE	/ /	/ /	/ /

OFFICIAL RECORD COPY

Letter to Entergy Nuclear Operations, Inc. from K. Green, dated March XX, 2009

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TELEPHONE CONFERENCE CALL
INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 AND 3
LICENSE RENEWAL APPLICATION

LIST OF PARTICIPANTS
March 02, 2009

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Hans Ashar	NRC
George Thomas	NRC
Bryce Lehman	NRC
Rich Morante	Brookhaven National Laboratory
Mike Stroud	Entergy Nuclear Operations, Inc. (Entergy)
Alan Cox	Entergy
Rich Drake	Entergy

ENCLOSURE 1

DRAFT REQUEST FOR ADDITIONAL INFORMATION
INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 AND 3
LICENSE RENEWAL APPLICATION
OPEN ITEMS

MARCH 2, 2009

The U.S. Nuclear Regulatory Commission (NRC or the staff) and representatives of Entergy Nuclear Operations, Inc., (Entergy or the applicant) held a telephone conference call on March 2, 2009, to discuss and clarify the following draft request for additional information (D-RAI) regarding certain open items identified in the Safety Evaluation Report with Open Items Related to the License Renewal of Indian Point Nuclear Generating Unit Nos. 2 and 3 (IP2 and IP3).

Follow-up D-RAI 1: Question 359 – Open Item 3.0.3.2.15-1

In Entergy Letter NL-08-169, dated November 6, 2008, "Additional Information Regarding License Renewal Application- Operating Experience Clarification," the applicant submitted a supplemental "clarification", describing its plan for implementing a permanent remediation of the Indian Point Nuclear Generating Unit No. 2 (IP2) refueling cavity leakage over the next three scheduled IP2 re-fueling outages (2010, 2012, 2014).

The transmittal letter NL-08-169, dated November 6, 2008, states: "There are no new commitments identified in this submittal." The applicant has previously taken a bore sample in the region of the leak, and has committed to take another sample prior to entering the period of extended operation. In absence of a formal commitment to remedy the source of leakage, the applicant's AMP should include a method to monitor for a degrading condition in the refueling cavity, and other structures affected by the leakage, during the period of extended operation, or the applicant should explain how the Structural Monitoring Program will adequately manage potential aging of this region during the period of extended operation.

Discussion: The applicant indicated that the question is clear. This D-RAI will be sent as a formal RAI.

Follow-up D-RAI 2: Question 360 – Open Item 3.0.3.2.15-2

In Entergy Letter NL-08-169, dated November 6, 2008, the applicant submitted a supplemental "clarification" for the IP2 spent fuel pool pit walls, which provides a detailed description of (1) the design margins for the spent fuel pool concrete walls; and (2) the results of prior concrete core sample testing and rebar corrosion testing.

a. In Commitment 25, the applicant commits to sample for tritium in groundwater wells in close proximity to the IP2 spent fuel pool at least every three months to assess for potential indications of spent fuel pool leakage. This commitment does not describe what actions will be taken if leakage continues. If sampling indicates continued leakage, the applicant's AMP should include a method to determine if a degraded condition exists during the period of extended operation, or the applicant should explain how the Structural Monitoring Program will adequately manage potential aging of the inaccessible concrete of the IP2 spent fuel pool due to borated water leakage during the period of extended operation.

b. The second paragraph on page 2 of Attachment 1 of the clarification letter dated November 6, 2008, states in part: "[l]ittle or no corrosion was observed in the rebar except at a location in the wall where spalling had occurred exposing rebar to the elements. Analysis of the rust particles showed high chloride content and low boron concentration indicating that rainwater was the primary cause of the observed corrosion." The staff requests the applicant to identify any Unit 2 and Unit 3 operating experience related to rebar corrosion, in light of the chloride content in rainwater, and identify the likely source for the high chloride content in the rainwater. Further the applicant is requested to explain whether and how the AMP is adequate to address this environment and the related potential aging effects to ensure there is no loss of intended function during the period of extended operation.

Discussion: The applicant indicated that the question is clear. This D-RAI will be sent as a formal RAI.

Follow-up D-RAI 3: Question 361 - Open Item 3.0.3.3.2-1

In Entergy Letter NL-08-169, dated November 6, 2008, the applicant submitted a supplemental "clarification" for IP containment spalling, describing the design margins for the Indian Point (IP) containment structures at the locations of existing concrete degradation on the vertical wall. Based on its review of the information, the staff identified areas that need further clarification and/or additional information to complete its review as described below:

a. The clarification for the IP containment spalling states: "As the surface concrete is not credited for tensile strength of the structure, the spalling has no impact on the available margins." The strength margins identified appear to be based on the nominal rebar dimensions, without any consideration for rebar degradation due to exposure and potential loss of bond between the concrete and the rebar. Explain whether, and if so how, the existing degradation and design margin will be considered in performing periodic inspections to monitor degradation, to ensure there is no loss of containment intended function during the period of extended operation.

b. In the spent fuel pool discussion, in the letter dated November 6, 2008, the applicant stated: "Little or no corrosion was observed in the rebar except at a location in the wall where spalling had occurred exposing rebar to the elements. Analysis of the rust particles showed high chloride content and low boron concentration indicating that rainwater was the primary cause of the observed corrosion." The applicant is requested to explain the adequacy of the 5-year IWL frequency of inspection of the degraded areas of the IP containments during the period of extended operation, considering the possibility of an increased site-specific corrosion rate of the exposed rebar on the containments.

Discussion: The applicant indicated that the question is clear. This D-RAI will be sent as a formal RAI.

Follow-up D-RAI 4: Open Item 3.5-1

In Entergy Letter NL-08-169, dated November 6, 2008, the applicant submitted a supplemental "clarification" to LRA Section 3.5.2.2 related to the concrete mix design method and the durability of concrete used at IP. In the LRA the applicant claimed that concrete meets the specifications of ACI 318-63 and the intent of ACI 201.2R-77, Guide to Durable Concrete. As a result the applicant claimed that several aging effects were not applicable to inaccessible concrete. Based on its review of the information, the staff identified areas that need further clarification and/or additional information to determine that the applicant meets the cited ACI specifications such that further evaluation is not necessary as recommended by the GALL Report.

a. In the clarification to LRA Section 3.5.2.2 (Part 1) on page 6 of Attachment 1 to letter NL-08-169, the applicant stated that it used Method 2 of Section 502 of ACI 318-63 by testing trial mixes to determine the water-cement ratios for the concrete mix design of the IP containments and other structures. In order for the staff to evaluate the quality of concrete in IP structures that may be subject to degradation during the period of extended operation, the staff requests the applicant to define the water-cement ratio that was specified at the time of construction. The applicant is requested to provide this information for the IP containments and other safety-related IP Unit 2 and 3 concrete structures, including the refueling cavities and the spent fuel pools.

b. In order for the staff to understand the parameters related to concrete strength and durability during the period of extended operation, the applicant is requested to describe the methodology used to establish the required concrete compressive strength of 3000 psi for the containment and other safety-related concrete structures, in accordance with ACI 318-63, Method 2. The applicant is requested to provide a summary of the results of statistical analyses performed, if any, of the original concrete strength tests, including number of samples, raw strength values from the test, the mean, the standard deviation, and the original criterion (e.g., mean minus 1 standard deviation, coefficient of variation) used to confirm that the required compressive strength was achieved, and can be relied upon during the period of extended operation such that further evaluation is not necessary as recommended by the GALL Report.

c. If the applicant is unable to provide the information requested in parts (a) and (b) above, the applicant is requested to explain how the aging effects on concrete will be adequately managed during the period of extended operation.

Discussion: With regard to part a of the question, during the telephone call, the applicant stated that because it used Method 2 of the ACI 318-63 standard to test the concrete mixtures, there is not one specific water-cement ratio that was "specified" at the time of construction. Therefore, the applicant requested that the word "specified" in the sentence, "…the staff requests the applicant to define the water-cement ratio that was specified at the time of construction," be changed to "used." The staff agreed that this would be a more appropriate term to use given the methodology used to test the concrete. Based on this discussion with the applicant, the staff agreed to revise this question as follows. The revised question will be sent as a formal RAI.

In the clarification to LRA Section 3.5.2.2 (Part 1) on page 6 of Attachment 1 to letter NL-08-169, the applicant stated that it used Method 2 of Section 502 of ACI 318-63 by testing trial mixes to determine the water-cement ratios for the concrete mix design of the IP containments and other structures. In order for the staff to evaluate the quality of concrete in IP structures that may be subject to degradation during the period of extended operation, the staff requests the applicant to define the water-cement ratio that was **used** at the time of construction. The applicant is requested to provide this information for the IP containments and other safety-related IP Unit 2 and 3 concrete structures, including the refueling cavities and the spent fuel pools.

Follow-up D-RAI 5: Open Item 3.5-2

In Entergy Letter NL-08-169, dated November 6, 2008, "Additional Information Regarding License Renewal Application- Operating Experience Clarification," the applicant submitted a supplemental "clarification" to LRA Section 3.5.2.2 (Part 3) for IP2 containment concrete and its ability to withstand local area temperatures up to 250ºF. The staff has identified areas that need further clarification and/or additional information as discussed below:

a. In the clarification to LRA Section 3.5.2.2 (Part 3) on page 7 of Attachment 1 to letter NL-08-169, the applicant stated that a 15% reduction of concrete strength could be expected when reaching temperatures of 250ºF and that concrete compressive strength tests showed an actual strength more than 15% higher than design strength. Please provide the methodology used to arrive at the conclusion that the actual concrete strength is more than 15% greater than 3000 psi, (i.e., greater than 3450 psi). Provide a summary of the results, including number of samples, raw strength values from the test, the mean, the standard deviation, and the original criterion (e.g., mean minus 1 standard deviation) used to confirm that the claimed strength was achieved.

b. Please explain how consideration was given to the reduction in modulus of elasticity in the high temperature concrete evaluation.

c. If the applicant is unable to provide the information requested in parts (a) and (b) above, the applicant is requested to explain how the aging effects on concrete, due to high temperatures, will be adequately managed during the period of extended operation.

Discussion: The applicant indicated that the question is clear. This D-RAI will be sent as a formal RAI.

During the telephone call, the staff inquired about the 250ºF local area temperature in the adjoining concrete for penetrations for pipes carrying hot fluid, and whether the air-to-air heat exchangers are needed to maintain the temperature below 250ºF. The applicant stated that it will include information regarding the local area temperature for concrete in near these penetrations when it responds to the RAI.