Davis-BesseNPEm Resource

From: CuadradoDeJesus, Samuel
Sent: Tuesday, January 31, 2012 8:15 AM
To: dorts@firstenergycorp.com; Davis-BesseHearingFile Resource
Subject: 7 13 2011 Teleconference Summary
Attachments: 7 13 2011 DB NRC Telecon Summary.docx

Steve,

Let me know if you have any comments.

Regards,
Samuel Cuadrado de Jesús
Project Manager
Projects Branch 1
Division of License Renewal
U.S. Nuclear Regulatory Commission
Phone: 301-415-2946
Samuel.CuadradoDeJesus@nrc.gov

Hearing Identifier: Davis_BesseLicenseRenewal_Saf_NonPublic
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Sent Date: 1/31/2012 8:14:34 AM
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From: CuadradoDeJesus, Samuel

Created By: Samuel.CuadradoDeJesus@nrc.gov

Recipients:
"dorts@firstenergycorp.com" <dorts@firstenergycorp.com>
Tracking Status: None
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LICENSEE: FirstEnergy Nuclear Operating Company

FACILITY: Davis-Besse

SUBJECT: SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON JULY 13, 2011, BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND FIRSTENERGY NUCLEAR OPERATING COMPANY, CONCERNING REQUESTS FOR ADDITIONAL INFORMATION PERTAINING TO THE DAVIS-BESSE, LICENSE RENEWAL APPLICATION (TAC. NO. ME4640)

The U.S. Nuclear Regulatory Commission (NRC or the staff) and representatives of FirstEnergy Nuclear Operating Company (FENOC or the applicant) held a telephone conference call on July 13, 2011, to discuss and clarify the applicant's responses to the staff's requests for additional information (RAIs) and new RAIs concerning the Davis-Besse license renewal application.

Enclosure 1 provides a listing of the participants and Enclosure 2 contains a description of the staff concerns discussed with the applicant. A brief description on the status of the items is also included.

The applicant had an opportunity to comment on this summary.

Samuel Cuadrado de Jesús, Project Manager
Projects Branch 1
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket Number:50-346
Enclosures:
1. List of Participants
2. List of Requests for Additional Information

cc w/encls: See next page

LICENSEE: FirstEnergy Nuclear Operating Company

FACILITY: Davis-Besse

SUBJECT: SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON JULY 13, 2011, BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND FIRSTENERGY NUCLEAR OPERATING COMPANY, CONCERNING REQUESTS FOR ADDITIONAL INFORMATION PERTAINING TO THE DAVIS-BESSE, LICENSE RENEWAL APPLICATION (TAC. NO. ME4640)

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Samuel Cuadrado de Jesús, Project Manager
Projects Branch 1
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket Number: 50-346
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1. List of Participants
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SUMMARY OF TELEPHONE CONFERENCE CALL
DAVIS-BESSE
LICENSE RENEWAL APPLICATION

LIST OF PARTICIPANTS
JULY 13, 2011

PARTICIPANTS	AFFILIATIONS
Samuel Cuadrado de Jesús	U.S. Nuclear Regulatory Commission (NRC)
Seung Min	NRC
James Gavula	NRC
Todd Mintz	Center for Nuclear Waste Regulatory Analyses
Cliff Custer	FirstEnergy Nuclear Operating Company (FENOC)
Steve Dort	FENOC
Allen McAllister	FENOC
Larry Hinkle	FENOC
Kathy Nesser	FENOC
Don Kosloff	FENOC
Jim Marley	FENOC

ENCLOSURE 1

SUMMARY OF TELEPHONE CONFERENCE CALL
DAVIS-BESSE
LICENSE RENEWAL APPLICATION
JULY 13, 2011

The U.S. Nuclear Regulatory Commission (NRC or the staff) and representatives of FirstEnergy Nuclear Operating Company (FENOC or the applicant) held a telephone conference call on July 13, 2011, to discuss and clarify the following response to requests for additional information (RAIs) and new RAIs concerning the Davis-Besse license renewal application (LRA).

Response to RAI 2.3.3.18-2

After reviewing the applicant's response to RAI 2.3.3.18-2 and previous to the telephone conference call the staff provided the applicant with Draft RAI 2.3.3.18-3 in order to discuss the staff's concerns with the applicant's response. Draft RAI 2.3.3.18-3 stated the following:

> RAI 2.3.3.18-3
>
> Background:
>
> LRA Section 2.3.3.18, "Makeup and Purification System," states that the letdown coolers, designated as DB-E25-1 and -2, are not subject to aging management review (AMR) because these components are periodically replaced and evaluated as short-lived components. Since these are normally long-lived passive components subject to AMR, the staff issued RAI 2.3.3.18-2 requesting the basis for the replacement frequency and the circumstances surrounding the need to replace these heat exchangers.
>
> In its response dated June 3, 2011, the applicant stated that the cooler replacement frequency is based on a qualified life from plant-specific operating experience, and is scheduled approximately every 14-years. The applicant also stated that the cooler design "has a tendency to develop leaks" after 14 to 16 years. The applicant further stated that the need to replace the coolers was attributed to fatigue cracking due to flow-induced vibration, and that an extent of condition review determined that the design of these coolers is unique and no other similar heat exchangers are installed at Davis-Besse.
>
> Issue:
>
> As previously noted in RAI 2.3.3.18-2, if the frequency is based on qualified life, then information should be provided to demonstrate that the cooler's intended function is being maintained consistent with the current licensing basis (CLB), at the point in time immediately prior to replacement. The staff notes that in accordance with SRP-LR Section A.1.2.3.4, an aging management approach based solely on detecting component failures is not considered an effective program. The staff also notes that in accordance with USAR Section 3.9.2, and Table 3.9-2, the letdown coolers are safety-related components constructed to the ASME Code, Section III, Class 3.

In addition, the staff notes that, if the design of the cooler results in "a tendency to develop leaks after…14 to 16 years," then each heat exchanger would have only been replaced twice, so far, at Davis-Besse. With the relatively limited operating experience and the limited number of data points, the ability to reasonably predict the life of the coolers appears to have a large degree of uncertainty. In addition, as noted in RAI 2.3.3.18-2, previous LRAs for other sites have attributed the fatigue cracking problem in these letdown coolers to be associated with specific operational transients, and, if a similar phenomenon is occurring at Davis-Besse, then a predicted life may need to consider transients in addition to operational time.

Request:

1) Provide a summary of Davis-Besse's operating experience associated with the letdown coolers, including occurrences of tube leakage and past replacements for each cooler. Consider including the circumstances how the associated leakage from the reactor coolant system into the component cooling water system was detected, and the approximate magnitude(s) of the leakage.

2) Provide a summary of any past evaluations of the cause(s) for previous tube leakage, including how leakage was determined to be from fatigue cracks due to flow-induced vibration, and the degree and extent of the cracking identified. Include information regarding the role any operational transients may have played in causing previous tube leakage or how it was concluded that operational transients need not be considered.

3) Provide the information that determined the cooler's intended function is being maintained consistent with CLB, at the point in time immediately prior to replacement.

Discussion:

The applicant asked for clarification on one issue with the above RAI. Regarding Item 1), above, the applicant asked whether the leakage needed to be quantified, since no measurements were taken. The staff stated that the applicant should describe how the leakage was identified and include a bounding estimate of the amount of leakage. It was mutually agreed that a final RAI will be issued on this topic.

ACTION: The staff will issue RAI 2.3.3.18-2

New Draftt RAI 3.1.2.2.16-1

The staff needed clarification as to how the applicant manages cracking due to PWSCC of steam generator (SG) tube-to-tubesheet welds in comparison with the GALL Report and SRP-LR. In order to discuss the staff's concerns, the staff provided the applicant with Draft RAI 3.1.2.2.16-1 previous to the telephone conference call. Draft RAI 3.1.2.2.16-1 stated the following:

Background:

GALL Report, Revision 2, item IV.D2.RP-185 recommends using GALL Report AMP XI.M2, "Water Chemistry" and a plant-specific program to manage cracking due to primary water stress corrosion cracking (PWSCC) of SG tube-to-tubesheet welds made of nickel alloy. GALL Report, Revision 2, item IV.D2.RP-185 also recommends that a

plant-specific program should be evaluated to confirm the effectiveness of the water chemistry program and to ensure cracking is not occurring. Consistently, SRP-LR, Revision 2, Section 3.1.2.2.11, item 2 states that cracking due to PWSCC could occur in SG nickel alloy tube-to-tubesheet welds exposed to reactor coolant. The SRP-LR, Revision 2 also states that unless the staff has approved a redefinition of the pressure boundary in which the tube-to-tubesheet weld is no longer included, the effectiveness of the primary water chemistry program should be verified to ensure cracking is not occurring.

By contrast, the applicant's AMR items for the SG components, which are described in LRA Table 3.1.2-4, do not clearly address how the applicant manages the cracking due to PWSCC of SG tube-to-tubesheet welds exposed to reactor coolant.

Issue:

The staff found a need to clarify how the applicant manages cracking due to PWSCC of SG tube-to-tubesheet welds in comparison with the GALL Report and SRP-LR.

Request:

1) If the applicant plans to replace the SGs prior to the period of extended operation, provide the following information.

   (a) Describe the materials to be used for the fabrication of the new SG tubes, tubesheet cladding and tube-to-tubesheet welds. If any of the tubes, tubesheet cladding, and weld filler metal (if applicable) is Alloy 600 or one of its associated weld metals such that the material is susceptible to PWSCC, discuss how cracking due to PWSCC of the tube-to-tubesheet welds will be managed for the period of extended operation.

   If the materials are determined not to be susceptible to PWSCC, confirm whether or not the applicant will continue to evaluate the plant-specific and industry operating experience related to PWSCC of the tube-to-tubesheet welds so that necessary corrective actions will be identified and performed to adequately manage the aging effect of the components.

   (b) In addition, if the operating experience indicates that the tube-to-tubesheet welds of the SGs have experienced PWSCC and the applicant proposes a one-time inspection to manage the aging effect of the replacement tube-to-tubesheet welds, justify why the one-time inspection is adequate to manage the aging effect of the replacement components in view that the existing components to be replaced have experienced cracking due to PWSCC under the given water chemistry conditions.

2) Provide the following information regarding the aging management method that the applicant will use if the steam generators are not replaced prior to the period of extended operation.

(a) Describe the aging management method that the applicant will use to manage cracking due to PWSCC of the tube-to-tubesheet welds if the SGs are not replaced prior to the period of extended operation. As part of the applicant's response, describe the materials of the current SG tubes, tubesheet cladding and tube-to-tubesheet welds, and determine whether or not any of the tubes, tubesheet cladding, and weld filler metals (if applicable) is susceptible to PWSCC.

If the materials are determined not to be susceptible to PWSCC, confirm whether or not the applicant will continue to evaluate the plant-specific and industry operating experience related to PWSCC of the tube-to-tubesheet welds so that necessary corrective actions will be identified and performed to adequately manage the aging effect of the components.

(b) In addition, if the operating experience indicates that the tube-to-tubesheet welds have experienced PWSCC and the applicant proposes a one-time inspection to manage the aging effect of the tube-to-tubesheet welds, justify why the one-time inspection is adequate to manage the aging effect of the components that have already experienced cracking due to PWSCC under the given water chemistry conditions.

Discussion:

After the applicant summarized the above RAI the applicant responded by suggesting that a supplement to LRA Table 3.1.2.4 will be submitted to add AMR items to address management of cracking due to PWSCC for SG tube-to-tubesheet welds exposed to reactor coolant. This action will align the Davis-Besse LRA with GALL Revision 2. The staff stated that it had no significant concerns with the approach; however, the staff wanted to separate this issue from discussion on proposed new SGs.

The staff stated that they would get back to the applicant for any follow up teleconferences or RAI guidance related to proposed new SGs.

SUBJECT: Summary of Telephone Conference Call conducted on July 13, 2011

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ENCLOSURE 2