Davis-BesseNPEm Resource

From: CuadradoDeJesus, Samuel
Sent: Tuesday, July 19, 2011 3:40 PM
To: 'custerc@firstenergycorp.com'
Cc: 'dorts@firstenergycorp.com'
Subject: Two upcoming RAI letters
Attachments: 6 19 11 Draft RAIs ML11195A0201.docx; 6 19 11 Draft RAIs DB B.2.41 and 4.6 ML11196A1270.docx

Cliff:

Attached are the draft RAI letters. We should issue their final versions by the end of this week or early next week.

Regards

Samuel Cuadrado de Jesús
Project Manager
Projects Branch1
Division of License Renewal
U.S. Nuclear Regulatory Commission
Phone: 301-415-2946
Samuel.CuadradoDeJesus@nrc.gov

Hearing Identifier: Davis_BesseLicenseRenewal_Saf_NonPublic
Email Number: 2967

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Subject: Two upcoming RAI letters
Sent Date: 7/19/2011 3:40:10 PM
Received Date: 7/19/2011 3:40:00 PM
From: CuadradoDeJesus, Samuel

Created By: Samuel.CuadradoDeJesus@nrc.gov

Recipients:
"'dorts@firstenergycorp.com'" <dorts@firstenergycorp.com>
Tracking Status: None
"'custerc@firstenergycorp.com'" <custerc@firstenergycorp.com>
Tracking Status: None

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Files	**Size**	**Date & Time**
MESSAGE	401	7/19/2011 3:40:00 PM
6 19 11 Draft RAIs ML11195A0201.docx	68598	
6 19 11 Draft RAIs DB B.2.41 and 4.6 ML11196A1270.docx	55769	

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

Barry S. Allen, Vice President
Davis-Besse Nuclear Power Station
FirstEnergy Nuclear Operating Company
5501 North State Route 2
Oak Harbor, OH 43449

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE DAVIS-BESSE NUCLEAR POWER STATION (TAC NO. ME4640)

Dear Mr. Allen:

By letter dated August 27, 2010, FirstEnergy Nuclear Operating Company, submitted an application pursuant to Title 10 of the *Code of Federal Regulations* Part 54 for renewal of Operating License NPF-3 for the Davis-Besse Nuclear Power Station. The staff of the U.S. Nuclear Regulatory Commission (NRC or the staff) is reviewing this application in accordance with the guidance in NUREG-1800, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants." During its review, the staff has identified areas where additional information is needed to complete the review. The staff's requests for additional information are included in the enclosure. Further requests for additional information may be issued in the future.

Items in the enclosure were discussed with Cliff Custer, of your staff, and a mutually agreeable date for the response is within 30 days from the date of this letter. If you have any questions, please contact me by telephone at 301-415-2946 or by e-mail at Samuel.CuadradoDeJesus@nrc.gov.

Sincerely,

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

Docket No. 50-346

Enclosure:
As stated

cc w/encl: Listserv

Barry S. Allen, Vice President
Davis-Besse Nuclear Power Station
FirstEnergy Nuclear Operating Company
5501 North State Route 2
Oak Harbor, OH 43449

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Docket No. 50-346

Enclosure:
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NAME	SFigueroa	SCuadrado	DMorey	SFigueroa	SCuadrado
DATE	07/18/2011	07/ /2011	07/ /2011	07/ /2011	07/ /2011

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Letter to Barry S. Allen from Samuel Cuadrado-De Jesús dated July XX, 2011

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE DAVIS-BESSE NUCLEAR POWER STATION (TAC NO. ME4640)

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P. Cooper
B. Harris (OGC)
M. Mahoney

DAVIS-BESSE NUCLEAR POWER STATION
LICENSE RENEWAL APPLICATION
REQUEST FOR ADDITIONAL INFORMATION

RAI B.2.22-5

Background:

By letter dated May 24, 2011, FirstEnergy Nuclear Operating Company (FENOC or the applicant) responded to a staff request for additional information (RAI) B.2.22-1 regarding the presence of standing water in the containment annulus pocket region and observed areas of corrosion on the containment exterior surface. In its response to the RAI, the applicant stated that FENOC plans to perform non-destructive testing (NDT) at a minimum of three representative locations. The applicant also stated that FENOC plans to inspect and maintain the accessible materials in the annulus sand pocket area. The applicant further stated that FENOC conducted thorough evaluation of the containment vessel corrosion in July of 2002. The report concluded that integrity of the containment vessel will be maintained with negligible additional corrosion in the future.

Issue:

IWE 1241(a) requires augmented examination of the containment interior and exterior surface areas that are subject to accelerated corrosion with no or minimal corrosion allowance or areas where absence or repeated loss of protective coatings has resulted in substantial corrosion or pitting. Typical locations of such areas are those exposed to standing water, repeated wetting and drying, persistent leakage, and those with geometrics suitable for water accumulation, condensation, and microbiological attack. Such areas may include penetration sleeves, surface wetted during refueling, concrete-to-steel shell or liner interfaces, embedment zones, leak chase channels, drain areas, or sump liners.

During the audit, the staff found that there is a history of ground water infiltration into the annulus area, and reviewed documentation (CR-72660, dated April 2, 2010) that indicated presence of standing water in the annulus sand pocket region. In addition, this condition report documented corrosion and peeling of the coating on the exterior surface of the containment shell, and deterioration of the coating applied to the top of the sand pocket. IWE Table IWE-2500-1, Examination Category E-C requires 100% UT measurement of the area designated for augmented examination during each inspection period until the areas examined remain essentially unchanged for three consecutive inspection periods. In the RAI response, the applicant did not explain why a one-time NDT examination at three locations in sand pocket region that is about 300-400 feet long, prior to period of extended operation, is appropriate in lieu of IWE-1241(a) and Table IWE-2500-1 requirements. In addition, the applicant did not provide specific details for inspecting and maintaining the accessible materials in the annulus sand pocket area.

ENCLOSURE

Request:

1. Provide technical justification for not following the requirements of IWE-1241(a) and Table IWE-2500-1 for performing UT examination of 100% of the area designated for augmented examination during each inspection period until the area remains essentially unchanged for three consecutive inspection periods. The staff is concerned that one-time NDT examination at three locations in sand pocket region that is about 300-400 feet long, prior to period of extended operation, may not be able to detect and establish a trend of the potential degradation of the steel containment over the long term.

2. Provide details and schedule of specific actions FENOC has planned to minimize water seepage into the sand pocket region.

3. Provide specific details and requirements for inspection, maintenance, and repair of the annulus sand pocket accessible and inaccessible areas, including the replacement of deteriorated grout and coating.

RAI B.2.22-6

Background:

By letter dated May 24, 2011, the applicant responded to a staff RAI B.2.22-2 regarding the examination of the inaccessible portion of the steel containment that may be exposed to borated water leakage from the reactor cavity pool leakage. The applicant added Commitment 39 to address the potential for borated water degradation of the steel containment vessel prior to entering the period of extended operation.

Issue:

In the RAI response, the applicant stated that prior to entering the period of extended operation, FENOC plans to access the inside surface of the embedded steel containment. Access will allow verification of whether or not borated water has come in contact with the steel containment vessel. If there is evidence of the presence of borated water in contact with the steel containment vessel, then FENOC will conduct NDT to determine what effect, if any, the borated water has had on the steel containment vessel. If there is evidence that borated water has come in contact with the steel containment vessel, then FENOC will perform a study to determine the effect through the period of extended operation of the loss of thickness in the steel containment due to exposure to borated water. However, the applicant did not provide specific details, schedule, and location for accessing the inside surface of the embedded steel containment.

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Request:

Please provide specific details, schedule, and location for accessing the inside surface of the embedded steel at the lowest point in the containment. In addition, the applicant is requested to provide details on how it will continue to inspect and monitor the inside surface (inaccessible area) of the steel containment until the borated water leakage from the reactor cavity is stopped.

RAI B.2.22-7

Background:

By letter dated May 24, 2011, the applicant responded to a staff RAI B.2.22-4 regarding the examination of the containment steel penetration sleeves, dissimilar metal welds, and steel components. The applicant stated that in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(b)(2)(ix), the examinations of the Category E-B pressure retaining welds and Category E-F pressure retaining dissimilar metal welds are not scheduled since these examinations are optional. However, the inservice Inspection (ISI) – IWE Program does include the Category E-A examinations of Containment surfaces. Additionally, the 10 CFR Part 50, Appendix J Program detects evidence of leakage as part of the Category E-P examinations.

Issue:

Davis-Besse Nuclear Power Station (DBNPS) LRA Section 4.6.2 states a search of the DBNPS current licensing basis did not identify any pressurization cycles or fatigue analyses for containment penetration assemblies. GALL Report, Rev. 2, AMP, XI.S1, "ASME Section XI, Subsection IWE," recommends that stainless steel penetration sleeves, dissimilar metal welds, bellows, and steel components that are subject to cyclic loading but have no current licensing basis fatigue analysis are monitored for cracking.

Request:

Please advise how DBNPS is going to comply with the GALL Report recommendations concerning the inspection of the containment stainless steel penetration sleeves, dissimilar metal welds, bellows, and steel components that are subject to cyclic loading but have no current licensing basis fatigue analysis.

RAI B.2.39-9

Background:

By letter dated May 24, 2011, the applicant responded to a staff RAI B.2.39-1 regarding operating experience with borated water leakage from the reactor refueling cavity. In the response the applicant stated that in 2003 it had been determined that there was no concern with the structural integrity of the affected structures. The applicant further stated that the leakage was still occurring and committed to "continue to reduce or mitigate the refueling canal leaks inside containment prior to entering the period of extended operation" (Commitment 33).

Issue:

1. The applicant stated that the leakage has continued during outages since the initial investigation in 2003; however, the applicant did not explain why the 2003 investigation results remained applicable after eight years, or provide a plan to reconfirm the integrity of the affected structures prior to entering the period of extended operation. In addition,

it is not clear from the RAI response, if all recommendations of the 2003 report, "Engineering Assessment Report-Refueling Canal Leakage," have been implemented.

2. Commitment 33, to reduce or mitigate the leakage, is vague and does not contain any information on possible mitigation techniques or timeframes. The applicant also did not address what actions would be taken if they were unable to stop the leakage.

3. The response did not address any of the components, such as structural supports, that may be affected by the borated water leakage.

Request:

1. Demonstrate that the structural integrity of the affected structures is adequate prior to the period of extended operation. Either clearly explain why the results of the initial investigation will remain valid until the leakage is stopped, or commit to a plan to confirm the integrity of affected structures prior to the period of extended operation (e.g. concrete core bores, concrete removal to inspect reinforcing steel, etc.).

2. Confirm if all the recommendations of the 2003 report, "Engineering Assessment Report-Refueling Canal Leakage," have been implemented or justify why they are unnecessary.

3. Provide more information on Commitment 33. As a minimum this should include probable corrective actions and a preliminary schedule. The response should also include what actions will be taken if the leakage cannot be stopped, when the actions would occur, and why the proposed timeframe is acceptable.

4. Describe the detail and types of inspections, and repairs that have been performed or planned to manage aging of the components (pipe supports, conduit supports, piping etc.) that are exposed to borated water leakage and exhibit signs of corrosion, as identified in condition reports during the 2010 refueling outage.

RAI B.2.39-10

Background:

By letter dated May 24, 2011, the applicant responded to a staff RAIs B.2.25-4 and B.2.39-2 regarding operating experience with spent fuel pool (SFP) leakage. In the response the applicant stated that based on visual inspections of walls or floors adjacent to the SFP the current leakage appears to be contained within the leak chase channels. The applicant also committed (Commitment 37) to take core bores prior to the period of extended operation of the two locations where leakage had been identified.

Issue:

1. The applicant stated that based on visual inspections, the current leakage appears to be contained within the leak chase channels; however, the applicant did not discuss an increased inspection frequency to continue to verify this, nor did the applicant commit to keeping the leak chase channels and unlined leak trenches clear. The applicant also stated that for small leaks visual observations are insufficient to monitor the leakage status.

2. The applicant reported that more comprehensive chemical analyses were performed in the past (e.g., as that carried out in 1996); however, the applicant did not discuss plans to perform comprehensive analyses during the period of extended operation. Chemical analyses performed in a timely fashion for effluent acidity and iron content (e.g., for pH, monthly; iron, semiannually) will assure that the effluent is not contributing to concrete degradation and corrosion of steel leak chase members and rebars. Thus the activity assures the integrity of the spent fuel pool remains during the period of extended operation.

3. Although the applicant committed to taking core bores, the response did not provide details about when the cores would be taken, or why the existing condition was acceptable until cores are taken. The response also did not address what would be included in the evaluation of the cores, or the acceptance criteria that would be used in the evaluation.

4. Minimal information was provided on the evaluation that will be done on the underside of the SFP (Commitment 38).

Request:

1. Explain how leakage will be kept from migrating through the concrete walls. If keeping the leak chase channels clear will be part of the solution, explain how the channels will be kept clear. If this involves a reoccurring activity, justify the frequency between occurrences. Also discuss and provide technical justification whether or not more frequent visual inspections that could include the use of boroscopes will be conducted on the SFP leak chase system assuring its functionality and on the surrounding concrete to verify that overflow leakage from clogged channels is not migrating through the surrounding concrete.

2. Provide more details as to why there is no frequent chemical analysis of the collected leakage to assure its acidity/pH remains comparable to that of the pool and its iron content is minimal.

3. Provide more details about when the concrete cores will be taken, including the frequency and timing to establish a trend. Explain what evaluations will be done on the cores and what criteria will be used to determine the adequacy of the effected concrete.

4. Provide more information on the evaluation discussed in Commitment 38, including possible actions and a preliminary schedule. Provide the criteria for determining the need to repair the cracking located on the underside of the SFP.

RAI B.2.39-11

Background:

By letter dated May 24, 2011, the applicant responded to a staff RAI B.2.39-3 regarding operating experience with aggressive groundwater infiltration and possible degradation of inaccessible concrete. In the response the applicant stated that there is no evidence that aggressive groundwater has contributed to structural degradation. However, to address the possibility of degradation, the applicant committed to obtain and evaluate a concrete core from a representative, normally inaccessible location (Commitment 20).

Issue:

Although the applicant committed to taking core bores, the response did not provide details about when the cores would be taken, where they would be taken, what would be included in the evaluation of the cores, or the acceptance criteria that would be used to determine adequacy of effected concrete.

Request:

Provide more details about the concrete cores, including the timing, location, and tests to be completed on the cores. Also explain what criteria will be used to determine acceptable results. Provide technical justification for all of the responses.

RAI B.2.39-12

Background:

By letter dated May 24, 2011, the applicant responded to a staff RAI B.2.39-7 regarding spalls observed on the shield building during a walkdown, and how the shield building would be inspected during the period of extended operation. In the response the applicant stated that the Structures Monitoring Program manages the shield building and will be enhanced to require optical aids, scaling technologies, mechanical lifts, ladders or scaffolding to allow visual inspections that meet the guidelines of ACI 349.3R (Commitment 20).

Issue:

Although the applicant committed to enhancing the Structures Monitoring Program prior to the period of extended operation, no information was provided on the spalls on the shield building.

Request:

Provide more information about the spalls on the shield building, including how they were identified and found acceptable or repaired. If they were repaired explain how the repairs were determined to be acceptable.

RAI B.2.40-2

Background:

By letter dated May 24, 2011, the applicant responded to a staff RAI B.2.40-1 regarding operating experience with degradation of the north embankment of the safety-related portion of the intake canal. In the response the applicant stated that a preventive maintenance has been initiated to monitor the embankment for any changes, both above and below the water. The applicant also stated that long-term plans have been developed for further evaluation of the embankment.

Issue:

Although the applicant stated long-term evaluation plans had been developed, they did not commit to completing the investigation and possible repairs prior to the period of extended operation.

Request:

Commit to completing the investigation, and possible repairs, of the safety-related intake canal embankment prior to the period of extended operation, or explain why it is unnecessary.

RAI 3.5.2.3.12-3

Background:

By letter dated June 3, 2011, the applicant responded to a staff RAI 3.5.2.3.12-1 regarding steel restraints in a backfill environment. The applicant stated that loss of material was not an applicable aging effect and referenced a study related to steel piles in undisturbed soil. The applicant also stated that opportunistic inspections would be conducted of the steel restraints if excavation work uncovers the components.

Issue:

The staff does not agree that the referenced study regarding piles in undisturbed soil applies to steel in structural backfill. Undisturbed soil has low oxygen levels which may limit corrosion. These conditions may not be present in structural backfill. In addition, the portion of Commitment 20 discussing opportunistic inspections only mentions concrete components.

Request:

1. Explain why the referenced study is applicable to the steel restraints in backfill, or propose an appropriate aging management program to manage loss of material for the steel restraints. If the proposal involves focused inspections, justify the adequacy of the inspection technique and frequency.

2. Explain whether or not the opportunistic inspections apply to components other than concrete, and update the commitment as necessary.

RAI 3.5.2.3.12-4

Background:

By letter dated June 3, 2011, the applicant responded to a staff RAI 3.5.2.3.12-2 asking how the Structures Monitoring Program would be used to manage loss of material for steel wave protection dikes in structural backfill and exposed to aggressive groundwater. The applicant stated the components are installed on both sides of a piping system that is subjected to the Buried Piping and Tank Inspections Program. Both this program and the Structures Monitoring Program have requirements for opportunistic inspections that would identify degradation of the components.

Issue:

Although the staff believes opportunistic inspections are appropriate for buried concrete when the groundwater is non-aggressive, the staff does not agree this approach is adequate for steel components in structural backfill with aggressive groundwater. In addition, the portion of Commitment 20 discussing opportunistic inspections does not discuss buried steel components.

Request:

1. Explain why opportunistic inspections are adequate to detect loss of material of steel components in structural backfill exposed to aggressive groundwater, or propose an appropriate aging management program to manage loss of material for the components. If the proposal involves focused inspections, justify the adequacy of the inspection technique and frequency.

   Explain whether or not the opportunistic inspections apply to components other than concrete, and update the commitment as necessary.

RAI B.2.25-7

Background:

By letter dated May 24, 2011, the applicant responded to a staff RAI B.2.25-4 regarding the selection of the monthly leakage rate inspection and pointed out that leakages vary from site to site and that there is not industry standard on the monitoring frequency. The applicant further determined that the Davis-Besse frequency of monthly leakage collection is sufficient for monitoring long term changes to the liner and leak chase system.

Issue:

The staff notes that even though operating experience may vary with configuration and status, nevertheless, there are examples of plants with similar leakage rates as DBNPS that perform the task on a daily basis. The staff also notes that the applicant collects 30 gallons of effluent per month from the leak chase system (a gallon a day) the units of the acceptance criteria, however, are in milliliters per minute. The staff further notes that according to IN 2004–05 leakages, if not identified in a timely fashion, could potentially have detrimental effects to SSCs and the environment.

Request:

1. Explain the discrepancy of units of the collected effluent gallons per day/month vs the acceptance criteria units of milliliters per minute. Are the milliliters per minute used during the monthly collections of the leakage or these are just averaging units reducing the gallons per day/month to milliliters per minute?

2. Identify any actions taken subsequent to the issue of IN 2004-05 and discuss if the leakage rates in excess of 15 milliliters per minute, stated in Commitment 30, would be considered critical enough to consider more frequent monitoring.

RAI B.2.25-8

Background:

By letter dated May 24, 2011, the applicant responded to a staff RAI B.2.25-6 regarding the Plant-Specific Leak Chase Program USAR supplement. According to the applicant the description provided in A1.25, is consistent with the SRP-LR recommendations to provide the basis for determining that aging of the liners will be managed, and briefly describe the program activities (i.e., leakage monitoring).

Issue:

The staff notes that the USAR supplement needs to be more descriptive incorporating in its description the applicant's acknowledgement in its response to RAI B.2.25-6 that the program manages loss of material for the spent fuel pool, the fuel transfer pit, and the cask pit stainless steel liners.

Request:

Please update the USAR supplement to appropriately reflect the material, environment, and aging effect the program manages for the spent fuel pool, the fuel transfer pit, and the cask pit liners.

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 because these components are periodically replaced and evaluated as short-lived components. Since these are normally long-lived passive components subject to aging management review, 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, Davis-Besse 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 response also stated that the cooler design "has a tendency to develop leaks" after 14 to 16 years. The response 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, 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 to 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 current licensing basis, at the point in time immediately prior to replacement.

Barry S. Allen, Vice President
Davis-Besse Nuclear Power Station
FirstEnergy Nuclear Operating Company
5501 North State Route 2
Oak Harbor, OH 43449

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Sincerely,

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

Docket No. 50-346

Enclosure:
As stated

cc w/encl: Listserv

Barry S. Allen, Vice President
Davis-Besse Nuclear Power Station
FirstEnergy Nuclear Operating Company
5501 North State Route 2
Oak Harbor, OH 43449

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE DAVIS-BESSE NUCLEAR POWER STATION (TAC NO. ME4640)

Dear Mr. Allen:

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Sincerely,

Samuel Cuadrado-De Jesús, Project Manager
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Docket No. 50-346

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DATE	07/18/2011	07/ /2011	07/ /2011	07/ /2011	07/ /2011

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Letter to Barry S. Allen from Samuel Cuadrado-De Jesús dated July XX, 2011

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE DAVIS-BESSE NUCLEAR POWER STATION (TAC NO. ME4640)

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RidsNrrDssScvb Resource
RidsOgcMailCenter Resource

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DAVIS-BESSE NUCLEAR POWER STATION
LICENSE RENEWAL APPLICATION
REQUEST FOR ADDITIONAL INFORMATION

RAI B.2.41-1

Background:

The SRP-LR, Revision 2, Section A.1.2.3.4, describes the recommendations for an acceptable detection of aging effects program element for a plant-specific program and states that "the discussion [of the inspection method or technique] should provide justification, including codes and standards referenced, that the technique and frequency are adequate to detect the aging effects before a loss of SC-intended function."

FirstEnergy Operating Company's (the applicant) Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Program, as provided in License Renewal Application (LRA) Section B.2.41 by letters dated May 24, 2011, and June 3, 2011, states that "enhanced visual exams" will be conducted to manage cracking for susceptible stainless steel components. However, the LRA does not state to what predetermined criteria (standard) enhanced visual examinations will be conducted.

Issue:

The LRA does not state the standard that enhanced visual examinations will be conducted against.

Request:

Revise LRA Section B.2.41, Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Program, to indicate the standard to which enhanced visual examinations will be conducted in order to manage cracking.

RAI B.2.41-2

Background:

The SRP-LR, Revision 2, Section A.1.2.3.10, describes the recommendations for an acceptable operating experience program element for new aging management programs (AMPs) and states that "an applicant should commit to a review of future plant-specific and industry operating experience for new programs to confirm their effectiveness."

LRA Table A-1, Davis-Besse License Renewal Commitments, does not include a commitment to perform a review of future operating experience to confirm the effectiveness of the new Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components Program.

ENCLOSURE

Issue:

This program's LRA commitment list is not consistent with the current staff position as stated within the SRP-LR, Revision 2, concerning reviews of future operating experience for new aging management programs.

Request:

Revise LRA Table A-1, Davis-Besse License Renewal Commitments, for the Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components Program to include a commitment to perform a future review of operating experience to confirm the effectiveness of this program or justify why such a review is not necessary.

RAI B.2.41-3

Background:

SRP-LR, Revision 2, Table 3.0-1 states that the recommended description for the final safety analysis report (FSAR) supplement for a plant-specific AMP should include the bases for determining that aging effects will be managed during the period of extended operation.

The applicant's Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Program's updated safety analysis report (USAR) supplement provided in LRA Section A.1.41 by letters dated May 24, 2011, and June 3, 2011, does not state what type of inspections will be used to manage the program's aging effects.

Issue:

The USAR supplement for the applicant's Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Program does not state the type of inspections that will be used to manage the program's aging effects, and therefore does not adequately describe the basis for how the program will manage aging effects during the period of extended operation.

Request:

Revise the USAR supplement associated with the Internal Surfaces in Miscellaneous Piping and Ducting Program to include the type of inspections that will be used to manage the program's aging effects, consistent with SRP-LR, Revision 2, or justify why the revision is not necessary.

RAI 4.6-1

Background:

In LRA Section 4.6.1, “Containment Vessel,” the applicant states that:

> Analysis of 400 pressure cycles (from -25 to 120 psi) and 400 temperature cycles (from 30°F to 120°F) were performed against the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section III, Paragraph N-415.1. The applicant also states that the values of 400 pressure and temperature cycles used to exclude fatigue analyses will not be exceeded for 60 years of operation and thus the TLAAs associated with the exclusion of the containment vessel from fatigue analysis per ASME Section III, Paragraph N-415.1 will remain valid through the period of extended operation in accordance with 10 CFR 54.21(c)(1)(i)

In LRA Section 4.6.2, “Permanent Canal Seal Plate”, the applicant states that:

> The fatigue analysis of the permanent canal seal plate seal membrane shows that the maximum fatigue usage factor is based on 50 full heatup/cooldown cycles.

Issue:

The staff reviewed LRA Section 4.6, 4.3.1, and the applicant’s USAR Section 3.8 and did not find the design basis information regarding:

1. The total number of transients used to determine that requirements of a fatigue waiver per Subparagraph N-415.1 were met for the containment vessel

2. The basis for the number of transients used in the original fatigue analysis of the permanent canal seal plate

The staff needs more information to confirm that fatigue evaluations for the containment vessel will remain valid for the period of extended operation in accordance with 10 CFR 54.21(c)(1). The staff also needs more information to verify the number of cycles used in the design of the permanent canal seal plate.

Request:

Provide the following information:

1. A description of the original design basis used to determine that requirements of a fatigue waiver per Subparagraph N-415.1 were met for the containment vessel.

2. The basis for the LRA statement that the maximum fatigue usage factor for the permanent canal seal plate is based on 50 cycles